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PRINCIPLES OF SECONDARY EDUCATION

A Textbook for Students of Education

BASED UPON WRITINGS OF REPRESENTATIVE EDUCATORS

BY
^{common}
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PREFACE

This volume has been compiled for use as a textbook in secondary education. The need for such a textbook has grown out of the impossibility of otherwise making accessible the best articles which have appeared in periodicals. In view of the fact that much of the best educational literature appears in magazines, the inability to employ this literature for instructional purposes has amounted to a severe handicap.

This volume makes four distinct contributions: first, it presents an organized collection of superior readings in secondary education; second, it presents comprehensive lists of principles of secondary education based upon the best writings of the present time; third, it presents a sufficient variety of education literature to enable teachers, if they choose, to approach each chapter by the problem method; and, fourth, it presents supplementary discussions which are designed to guide students successfully through a large body of professional reading.

In the use of this textbook, the principles which are stated at the close of each chapter can be proposed to students as theses or challenges to be defended or criticized by any evidence which students can adduce from the readings or from any other sources. In the employment of the problem method, the organization of Chapter I is suggestive of a suitable method to pursue in the study of the later chapters. At the close of each chapter are suggestions for study and discussion based largely upon the readings. These suggestions can of course be supplemented by the use of such subjects for topics as those catalogued at the close of the book. The bibliographies are intended for use in connection with this work.

Deep gratitude is here expressed to the authors of this

volume. It is a pleasure to record that not a single refusal to grant permission to quote articles or passages was encountered in the compilation of these readings. As many abridgments and adaptations have been made of certain articles, the compiler is responsible for any apparent ineffectiveness or unclearness in the passages. Gratitude is expressed to the editors of magazines who have been no less liberal than the original writers themselves. Appreciation is also acknowledged of the generosity and courtesy of publishing companies in permitting the reproduction of passages selected from their books.

Finally, the author acknowledges the material assistance rendered by his colleagues who read the manuscript as a whole or in part: to Professor A. S. Barr and Professor John Guy Fowlkes for their constructive criticisms of the manuscript as a whole, to Professor V. A. C. Henmon for his aid in the preparation of the chapters on the mental equipment of secondary school pupils, and to Professor A. H. Edgerton for his suggestions in the preparation of the chapter on the guidance of secondary school pupils.

If the passages reproduced in this volume continue to be read with as great profit as they have been in their original settings, and are read by greater numbers of students than could otherwise have had access to them, the purposes of this book will have been achieved.

WILLIS L. UHL

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PART I

THE AMERICAN PLAN FOR SECONDARY EDUCATION

CHAPTER I

AMERICA ACCEPTS A CHALLENGE IN SECONDARY EDUCATION; IS HER TASK TOO GREAT?

The challenge which America has accepted in secondary education. In her provisions for secondary education, America is more liberal than any other nation. While other nations commonly exact a tuition fee for higher school privileges, America not only offers freedom of her schools but for certain pupils whose homes are remote from any high school even provides transportation to her schools. For instance, certain states not only open the pathway to secondary education but also compel attendance beyond the elementary school by statutory provisions.¹

This liberality in the provision of secondary education is the natural and necessary result of the acceptance of a clearly defined challenge. This challenge is a part of American popular philosophy. It lies in the assertion that all persons are entitled to an opportunity to develop themselves in the best manner that they and society together can devise. Advocacy of this educational policy can be found not only among the statements of demagogues but also in the writings of astute administrators. One hundred years ago advocacy of universal education seems to have referred to the universal provision of elementary-school facilities; today, it refers also to the universal provision of high-school facilities.

¹Chart No. 2 (to accompany Bulletin No. 55). Federal Board for Vocational Education, 1921.

But this policy of generosity does not pass unchallenged. For example, one who frequents college halls during registration days is likely to be informed that both secondary and collegiate education are now attempted by too large a number of persons. This statement is often followed by the assertion that the high school is culpable in granting diplomas too freely. It is even maintained by certain of these critics that too many boys and girls attempt to obtain a high-school education. Occasionally, similar comments are made by high-school teachers who hold that the present high-school practice is incorrect in attempting to provide for the universal distribution of its benefits. All these critics unite in asserting that a school of high standards attended by a carefully selected body of students would yield a far more valuable total product than that of present-day institutions. These critics say also that present-day high schools are conducted for the purpose of giving all high-school students forms of training which are adapted only to the needs of mediocre and inferior students. The implication of these criticisms is that instead of providing for the masses and neglecting the leaders, America should provide for the leaders and allow instruments of selection to eliminate the hindmost.

In addition to unqualified advocacy and adverse criticism of the policy of distributing widely the advantages of higher schools, there is a growing apprehension upon the part of certain critics. This apprehension arises from the belief that indefinite continuance of present policies will lead to a depreciated mental product, if, indeed, it does not bankrupt our exchequers. Persons who hold this view believe that school patrons as well as school officers must be apprized of impending educational dangers. These critics generally advocate further development of the high school, but they favor intensive as well as extensive development, more frequent and more accurate stock-taking of our high-school policies, and the cultivation of greater seriousness of purpose in high-school students. They advocate not retrenchment

or checking; instead, they advocate rational guidance in the administration of high-school policies.

The writings which follow indicate the magnitude of America's task in secondary education by discussions (1) of American policies; (2) of the lines of defense of America's policies; and (3) of the need for earnestly studying these policies to find suitable answers to the question, Is America attempting too great a task in secondary education?

THE AMERICAN EXPERIMENT OF FREE HIGHER EDUCATION^a

BY CHARLES H. JUDD

The fact is that America has launched in its program of a tax-supported higher education an experiment of such magnitude that there is some question as to our ability to see it through. This experiment was launched in a small way and without the slightest calculation on the part of communities as to the scope of the experiment. It has been running along for a period of years without encountering any serious obstacles. In recent years it has developed with tremendous rapidity. We have all been fascinated by this rapid growth of higher education, and we have applauded its expansion. Even today one can find no end of general enthusiasm for free high schools and state-supported universities. It seems to be the rankést kind of heresy even to use the word experiment. Yet experiment is the only legitimate descriptive word to apply to this whole series of undertakings.

Europeans have been more keenly aware than native Americans of the experimental character of our program. They have seen also the relation of our free high schools and higher institutions to our general social system. This clearer insight of the Europeans is due to the fact that their institutions corresponding to our higher schools are all tuition schools. There is no tax-supported secondary school in Europe, or for that matter any other continent except North America. Europe has never ventured to consider paying for higher schools out of public taxation. The higher schools abroad are class schools designed to give training only to the upper ranks of society. The upper classes have kept for themselves and their children the right to superior schooling and have never thought of admitting the lower classes

^a *The School Review*, XXIX, 94-105. February, 1921. Abridged.

to a liberal share in higher learning; much less have they thought of offering it freely to all comers.

Europe has seen clearly in the contrast between American practices and her own the effort of a democracy to make intellectual opportunity as nearly universal as possible. Europe has also been very skeptical as to the success of this effort. Sometimes this skepticism has expressed itself in economic terms, and doubt has been recorded as to the possibility of raising a whole people to a higher level without disrupting industrial society; but more commonly the doubt of Europe has been expressed in social terms. How is America to develop leaders if she spreads her higher training like a thin veneer over the whole population?

We could afford to go on our way without heeding the skepticism of Europe if our experiment were meeting with unqualified success. Frankness with ourselves, however, compels us, in view of many recent happenings, seriously to ask whether the experiment is going on as we should like to have it.

First, let us ask whether we are really able to afford high schools. A short time ago there came to the writer of this article a letter from a town in the northern part of North Dakota containing the following paragraphs:

"Five successive crop failures in this part of the state have so reduced credit that the banks will no longer cash the teachers' salary warrants. The school district does not know where it can obtain funds. Bonds sold within the state could not secure money for at least a year because the school funds of the state are loaned out and come in slowly and a great many schools already have their applications for such funds on file. An attempt has been made to sell bonds but without success.

"The schools will have to be closed if some definite relief cannot be guaranteed soon. The teachers, of course, will not stay under present conditions. The local school board is unable to solve the problem, but is very eager to find a way out.

"The money stringency is general all over the country but is very much worse in the western part of North Dakota on account of low production for several years as stated above."

Perhaps someone will say this is not typical. Fortunately, it is not entirely typical, but unfortunately, on the other hand, it is the last stage of a journey on which many a larger and more

opulent community is well launched. New York City has been arguing about next year's budget, and the responsible officials of the city have repeatedly said that it is impossible to supply for the schools the funds said by the board of education to be indispensable. Chicago has a deficit in its school accounts of several millions of dollars and no sinking fund in sight with which to meet this deficit. Nor is this a temporary situation resulting from the war. The deficit is of long standing and has increased steadily for a number of years.

The same story can be told of cities large and small all over the country. The post-war economic stress has greatly accelerated the climax, but we have for some time been steadily approaching the point where the people of this country cannot find in ordinary taxes adequate funds for schools. For about a generation the schools have been steadily absorbing a larger fraction of the public revenue, and they have been increasing at an enormous rate their demands for equipment and support of every type.

The school deficits of the present day are not attributable in equal degree to the lower and higher schools. The higher schools are the ones which have shown the largest proportionate increase, and they are more expensive than the lower schools in every respect. The Bureau of Education reports that there were in attendance in high schools, public and private, last year 2,000,000 students. This is more than six times as many as there were in 1890. In the same interval the general population of the country has not quite doubled, and elementary schools have increased in a ratio only slightly more than the general population. Between the years 1909 and 1916 the number of teachers in public four-year high schools doubled, while the teachers in elementary schools increased somewhat less than 18 per cent. In short, the most notable expansion in public schools has been in the upper levels of the educational system.

The end is not yet. American communities have set for themselves the goal of a high-school education for every boy and girl. That this idea is seriously entertained appears in the legislation adopted in many states providing for the payment of a student's tuition when the district does not provide a high school of its own. It appears also in the rural high schools which one encounters in traveling through many a sparsely settled rural district. It appears in the laws which are being passed in progressive states raising the age of compulsory schooling from fourteen to sixteen or eighteen.

Let us see what a universal high-school education would mean in the way of costs. The state of California has just adopted by popular vote a provision which compels the payment by the state of \$30 per capita for every child in elementary school or high school. The same measure provides that the local community must raise by taxation a sum not less than \$30 for each pupil in the elementary school and not less than \$60 for each pupil in the high school. These figures, let it be noted, are minimum figures. To be sure, California has long been one of the most progressive states in the support of schools, but it is fair to assume that what California regards as a minimum must ultimately be thought of as not too high for an average for the country as a whole. If the time should come when all pupils up to eighteen years of age are in school, and if the California figures are assumed as the ultimate averages, the total cost of education in this country will be not what it was last year, namely, one billion dollars, but one and three-quarters billions per annum. The cities which are now unable to get on without a school deficit will have to find some way of greatly increasing their school revenues.

Once more let it be repeated that the American people have entered on this enterprise of providing a free high-school education without any serious thought as to ultimate costs. They have passed through long years of fairly gratifying operation without being obliged to face the full bill of expenses which will attach to a completely organized system. It is only recently that the financial strain is beginning to tax the resources of communities. We are becoming aware of costs in a new way. There is some danger that we shall think of the whole problem of education as a matter of finance. It is true that financial support is essential and must be secured, but the real problem is a social problem. Are the American people really willing and able to carry their ambition for a universal free higher education to its consummation?

The experiment of higher education is not in question merely because it involves knotty financial problems; it is in question because no adequate provision is attempted in this country for the training of teachers. The country has been informed during the last year or two of the serious shortage of teachers. With characteristic American optimism our schools have made good the shortage by dropping standards to the level of the supply and trusting providence to see to it that no harm is done to our institutions and their students. There is practically no concern

among the people at large about the grade of instruction which is tolerated in many of our high schools. Not long ago I heard a president of a normal school pointing out the desirability of accepting normal-school certificates as credentials for high-school teaching because there is no possibility of securing an adequate number of graduates of colleges. Most college graduates who go into teaching regard themselves as amply qualified without a day's thought or study devoted to preparation for the technical task of managing pupils or imparting instruction. This was true before the present shortage of teachers appeared. In the higher schools of Europe no teacher secures a position without rigorous special training; but with us there is no thought of impeding the progress of universal higher education by difficult demands made on the teaching staff. Even the most highly trained members of academic communities think of high-school teaching as simple enough for any college graduate.

All this gives a true friend of the high school serious pause. We are engaged in one of the greatest social experiments that the world has ever witnessed, the experiment of offering a free higher education to a whole people, and this difficult and delicate task is cheerfully turned over to novices.

Is it any wonder that the quality of instruction in American high schools is, to say the least, uneven? Is it any wonder that students who have studied Latin for four years cannot read Latin, that there is a prodigious failure in mathematics, and that English teachers frankly confess that there is only a meager mastery of the vernacular among their pupils? The quality of American higher education, as well as its democratic spread over all the population, will have to be considered when we are estimating the success of the American experiment of universal higher education.

Finally, there must be a frank recognition of the fact that the vast experiment of higher education has in recent years been getting out of hand because of a lack on the part of many students of appreciation of what their opportunity means. American boys and girls have come to think of the high school as their right. That it is beginning to tax the community's resources to the utmost, that its organization calls for skill which the country cannot afford to give, never enters the mind of the average student. He or she looks on the high school as a part of his or her natural inheritance. The girl often attends as a matter of social course, and the boy attends because he is not yet

ready to take up work of a serious kind. The great influx of students has swept into the high schools some students who have no serious intellectual interests and who have no expectation of cultivating any literary or scientific proficiency. Once in the high school, this great body of students thinks not at all of conserving public resources.

The fact is that the ordinary American citizen has never realized that the high school is one of our most hazardous social experiments, and he has never taught his boy or girl to think of the high school as costly or as a privilege which no other civilization offers in like fashion to its youth. Recent years have made this ordinary citizen aware that something is impending, but he does not know what. He has been told that there is difficulty in securing teachers; he has heard much about costs; but all this discussion has seemed to him remote. It does not touch his boy or girl; it concerns a public institution with which he need not busy himself except when it annoys him.

It is not to be wondered at that the ordinary citizen has been unaware of the real issues at stake because even professional educators have been discussing the symptoms of the case rather than its fundamental causes. Teachers have been talking about their salaries, and superintendents have been talking about the difficulties of staffing their schools. The public has come to believe that a suffering class of citizens is in need of public succor and that if this rescue fund is not contributed in the form of a bonus or increase in salary, there may be a strike which will greatly inconvenience the city's homes and possibly congest the streets with idle youth.

What the American people need at this time is a new insight into the essentials of their democratic society. America has undertaken to set up a new social system. It has taken generations to bring about a partial disruption of European traditions. The traditions of that older form of society dictate that a part and only a part of the people shall have a higher education. The older civilization has bequeathed to us also an industrial system which calls for a certain number of people who are to do the hard work of the world. This industrial system makes its distinctions among people in terms of leisure and wealth and consequent opportunity to take on a higher education. Our democracy still retains many of the older industrial institutions, but has said with regard to higher education, "This is a common good; this shall be made accessible to all." This idea is begin-

ning to penetrate the thinking of our new society. In recent years it has spread with astonishing celerity. Today we are forced to look at the consequences of our new theory. The high school is crowded with all kinds of pupils demanding their share in the new social order. The taxpayer finds that the industrial system is not ready to bear in its accustomed ways the cost of this new social order, and the public begins to be restless about an institution which it only vaguely understands.

The cure for the present situation is not easy to secure. It may be too hopeful to believe that Americans can be convinced of the gravity of the matter, even if they are told in plain terms. Perhaps we shall have to wreck some more of our hopes and waste more human life before we work out the experiment which we are blindly carrying forward. Perhaps it is futile to ask high-school officers to undertake the responsibility of adding to their other duties an exposition of the true purpose of a system of free high schools. If so, there may be an escape from complete despair. The high school has survived thus far and on the whole has broadened its scope in spite of general ignorance of its full value to American life. Probably in the process of human evolution a way will appear to save that which is good in this institution, even if no one takes up the task of representing it. It is worth while trying, however, to make the effort to interest high-school teachers and principals in a new branch of education, namely, the training of communities to understand how unique the American higher education is.

STATISTICS OF HIGH SCHOOLS^a

BY H. R. BONNER

There are in the United States nearly 17,000 public high schools. The number of high schools has increased over 452 per cent since 1890. Some concrete conception of this enormous increase may be gained by noting that every day of the last 28 years has witnessed the establishment of a high school. In 1890, when statistics of public and private high schools were first treated separately, only 60.8 per cent of the high schools in the country were under public control while in 1918 over 87 per cent were so reported. During the same period the percentage of high school students enrolled in public schools rose from 68

^a *Statistics of High Schools, 1917-18.* United States Bureau of Education Bulletin, 1920, No. 19. Adapted.

to 91. This indicates that the growth of private schools has just about kept pace with the increase of population, while the growth of public high schools has been almost ten and one-half times as rapid.

The rapid progress of the high-school movement has brought forth many small schools which have not yet reached "maturity." If the high schools in the United States are assembled in groups in such a manner that Group 1 includes all schools enrolling 1-25 students; Group 2, those with 26-50 students; Group 3, the schools with 51-75 students, and so forth, it is found that almost one-fourth of the high schools in this country have fewer than 26 students, and over one-fourth of them from 26 to 50 students. These facts are shown in Table I.

TABLE I
SIZES OF AMERICAN HIGH SCHOOLS

NUMBER OF PUPILS	SCHOOLS IN UNITED STATES		SCHOOLS IN MASSA- CHUSETTS		SCHOOLS IN CALIFORNIA		SCHOOLS IN MONTANA		SCHOOLS IN VIRGINIA	
	Num- ber	Per cent of total	Num- ber	Per cent of total	Num- ber	Per cent of total	Num- ber	Per cent of total	Num- ber	Per cent of total
1	2	3	4	5	6	7	8	9	10	11
1- 25	3,222	23.1	10	4.2	5	1.8	50	40.3	152	36.6
26- 50	3,820	27.4	45	18.9	40	14.5	25	20.2	160	38.6
51- 75	2,166	15.5	27	11.3	35	12.7	16	12.9	45	10.8
76-100	1,256	9.0	14	5.9	29	10.6	13	10.5	21	5.1
101-125	764	5.7	15	6.3	24	8.7	6	4.9	11	2.6
126-150	456	3.2	13	5.5	22	8.0	1	.8	4	1.0
151-175	348	2.5	6	2.5	19	6.9	0	.0	3	.7
175-200	265	1.9	6	2.5	10	3.6	2	1.6	4	1.0
201-225	171	1.2	4	1.7	7	2.6	1	.8	2	.5
226-250	139	1.0	7	2.9	5	1.8	0	.0	0	.0
251-275	124	.9	5	2.1	5	1.8	0	.0	1	.2
276-300	110	.8	4	1.7	6	2.2	1	.8	0	.0
301-325	86	.6	2	.9	4	1.5	1	.8	0	.0
326-350	95	.7	4	1.7	8	2.9	0	.0	0	.0
351-375	66	.5	6	2.5	3	1.1	0	.0	0	.0
376-400	64	.4	4	1.7	1	.4	0	.0	2	.5
401-425	54	.4	0	.0	2	.7	1	.8	0	.0
426-450	46	.3	3	1.3	2	.7	0	.0	0	.0
451-475	33	.2	2	.8	2	.7	1	.8	2	.5
476-500	34	.2	1	.4	1	.4	1	.8	0	.0
Over 500	632	4.5	60	25.2	45	16.4	5	4.0	8	1.9
Total	13,951	100.0	238	100.0	275	100.0	124	100.0	415	100.0

The size of schools is of more than passing interest. Upon the size of schools depends the possibility of offering a narrow or a broad program of studies, for with the large high school comes a larger teaching staff and an opportunity to offer commercial, home economics, manual training, and trade work, while the smaller schools, with only two or three teachers, cannot hope to offer so great a variety of training and usually limit their activities to academics, or possibly a small amount of agriculture. The extra-curricular life of smaller schools is similarly restricted. Over 76 per cent of all high schools, however, offer a four-year course, and in these schools are enrolled over 95 per cent of the total number of students. It is highly significant that only 5 per cent of the students attending high school do not have the advantage of attending a four-year high school.

Less encouraging is the fact that the school year is often eight months or less in length. Eighteen per cent of all public high schools are open less than 160 days a year; 62 per cent from 161 to 180 days; and 20 per cent for 180 or more. Altogether, 9,186 pupils attend the 288 schools which are in session no more than 140 days. Sixty of these schools are in Indiana, 50 in North Carolina, 49 in Pennsylvania, and 63 in Texas.

The total number of high-school students (including 90,448 pupils in the elementary grades of junior high schools) enrolled in the 13,951 schools from which reports were received by the Bureau of Education in 1918 is 1,735,619. If these students were stationed at intervals of 3 feet, they would form a line of 983 miles long, which would reach from Washington, D. C., to Kansas City. Of the 1,645,171 secondary students, 704,856 are boys; 940,315 or 57.2 per cent are girls. This proportion of boys and girls is almost exactly the same as it was in 1890 when 57.7 per cent of the pupils were girls.^{3a}

In 1890 only 3.2 persons in each 1,000 of the population were enrolled in public high schools; in 1918 the corresponding number was 15.6, or almost five times as great a proportion. In California 27 persons out of each 1,000 in the population are found in high schools; almost as high a proportion is found in the high schools of Kansas. Thus it is demonstrated that it is possible for as much as 2.7 per cent of the population to be enrolled in

^{3a} In the year 1921-1922, there were 3,098,882 secondary school pupils in the United States. Of these, 225,873 were enrolled in private and parochial schools; the remainder were in public schools. United States Bureau of Education Bulletin, 1924, No. 31.

high schools. In South Carolina the corresponding number is only 0.53 per cent. Thus it is seen that California has over five times as great a proportion of its population getting a high-school education as has South Carolina. Similar percentages for Arkansas and Mississippi are less than one-fourth of those for California and Kansas.

It is desirable to measure the cost of high-school education. To ascertain this average and the corresponding one for elementary education is the purpose of these few paragraphs. Unfortunately, the schedules used in gathering the data which have been summarized herein did not ask for a complete statement of high-school expenditures, it being thought that the high-school principal would not have at hand a complete statement of high-school finances, but would know his own salary and official expenses, the salary and expenses of his supervisors devoting all or part time to high-school subjects, the salary of his teachers, the cost of high-school textbooks, and the amount spent for supplies used in instruction. The functions of expense just enumerated are technically known as "*expenses of instruction.*" The other general functions not mentioned are treated elaborately in the chapter on State school systems. It becomes necessary, therefore, to resort to the State report to supplement the information summarized in this report. The first of these functions, *general control*, can not be easily divided into elementary and secondary school costs. Neither can interest paid on indebtedness. The others can. They are: First, *operation of plant*, including the wages of janitors, firemen, engineers, etc., and the cost of fuel, water, light, power, and janitor's supplies; second, *maintenance of plant*, including all up-keep or repair costs; third, *auxiliary agencies*, including library, health, recreational, and other miscellaneous activities; fourth, *fixed charges*, including annual fixed expenditures, such as rent, insurance, contributions, etc.; and fifth, *outlays*, including cost of new buildings and of grounds and of new equipment.

The following States made a fairly reliable separation of expenditures between elementary and secondary schools for the functions named above, except for *general control* and for *interest* on indebtedness: Arizona, California, Connecticut, District of Columbia, Louisiana, Maine, Utah, Vermont, and West Virginia. The expenditures in these States aggregate \$76,940,194, or over 10 per cent of the corresponding expenditures for the United States (\$763,678,089). These States enroll in school almost 10

per cent of all the pupils in the public schools of the country (2,031,878 out of 20,853,516). Our "sample," therefore, represents about one-tenth of the Nation. The average length of the school term in these nine States is 160.7 days, exactly the same as it is for the United States. The States are also located in the East, South, and West. The total per capita cost of education for the United States based on the total enrollment is \$36.62; for these nine States, \$37.86. The corresponding per capita for the United States for current expenses only (outlays omitted) is \$30.91, for these nine States, \$32.56. In the State report it is shown that out of each \$1 spent for education 3.3 cents goes for general control, 58.2 cents for instruction, 15.5 cents for outlays, and 23 cents for other miscellaneous purposes. In these nine States it is found that a school dollar is distributed as follows: For general control, 2.9 cents; for instruction, 62.6 cents; for outlays, 14.1 cents; and for other purposes, 20.4 cents. As corresponding figures in each series of computations are practically equivalent, our "sample" of States should be fairly dependable.

Of the \$76,940,194 spent for education in these nine States, \$2,246,207 went for general control and \$919,534 for interest on the school debt, neither of which can be reliably separated into elementary and secondary school costs. The per pupil cost for general control and interest in these States, therefore, is \$1.56 and is assumed to be the same for elementary and secondary school pupils. On the other functions of expense it was found necessary in only a few minor instances to prorate an amount between elementary and secondary. These nine States spent for instruction in the elementary schools \$35,714,450 and in secondary schools \$12,467,234; for outlays in the elementary schools \$7,330,484 and in the secondary schools \$3,452,761 (the total amount spent was prorated in the ratio of 138 to 65); for operation of the elementary school plant \$7,069,241 and of the secondary school plant \$2,792,243; for maintenance of elementary schools \$1,717,091 and of secondary schools \$385,533; for auxiliary agencies in the elementary schools \$1,467,339 and in secondary schools \$529,726; and for fixed charges incident to elementary schools \$639,870 and to secondary schools \$208,481. Of the 2,031,878 pupils enrolled in the schools of these States, 1,792,681 were registered in elementary schools and 239,197 in secondary schools.

From these data significant relationships may be computed.

Excluding the cost of general control and interest on indebtedness the total amount spent on the 1,792,681 elementary school pupils was \$53,938,475, or a per capita of \$30.09. With the same exclusions the total amount spent on the 239,197 secondary school students was \$19,835,978, or a per capita of \$82.93. If the per pupil cost of general control and interest, viz, \$1.56, is added to these per capitas, *the average cost of elementary education is found to be \$31.65 and of secondary education \$84.49 per year.* These aggregate per capitas include per pupil costs for outlays amounting to \$4.09 and \$14.43, respectively, which should be deducted if it is desired to secure an average expressing the per capita current expenses only. These remainders are \$27.56 and \$70.05, respectively. Thus it is shown that *it costs annually 2.67 times as much to keep a high-school student in school as it does an elementary-school pupil.* It should be remembered, however, that the elementary-school year is not so long as the high-school year. Estimating for Vermont only (using the New Hampshire ratios), it is found that the average length of the elementary-school term in these 9 States is 158.7 days, while that of the high-school term is 176.2 days. *The total per pupil cost per day in elementary schools is therefore 19.94 cents and in high schools 47.95 cents, or only 2.40 times as much.*

Is America attempting too great a task in secondary education? The answer of the psychologist. At the present time many states enroll one-third or more of the population of high-school age in their high schools. For example, of about 202,000 Wisconsin boys and girls whose ages range from fourteen to eighteen, about 75,000 are enrolled in the high schools of the state. Other States, as California and Kansas, enroll nearly fifty per cent more of their children of high-school age in high school, while the high schools of a few states, as South Carolina and Mississippi enroll only about one-third as high a proportion of their children of high-school age. For the United States as a whole, slightly less than one-third of the pupils of fourteen to eighteen years of age attend high school.

By combining these figures with the results of the application of the army psychological tests to high-school students, an answer to our question can be derived. The army tests were

so constructed that the middle fifty per cent of the men in the army fell into the group designated as the C-group. The mid-point of the C-group represents, therefore, the mid-point of the intelligence of the random sampling of men examined—so far as that test can indicate that point. If intellectual abilities can be considered as being of different levels or strata, one may say that the upper half of the strata contains the most promising half of the abilities.

Shortly after the close of the Great War, the same army test was applied to high-school students in many schools. The results of these uses of the test show that only the upper fifty per cent of intellectual abilities is represented in the high school. That is, the number of pupils whose test records fell below that of the mid-point of the C-groups is negligible. If it is true that only persons of the upper fifty per cent or upper half of the intellectual strata are found in the high school, one may conclude that an increase of high-school attendance to the point of including the entire upper fifty per cent can be effected without drawing into the school any pupils who are inferior to some who now attend the high school.

This somewhat involved reasoning has led to the following conclusions: High schools now enroll nearly one-third of the pupils of high-school age. The army test shows that high schools go as low as the mid-point of intellectual strata for their students. Upon the basis of these two statements, it would be possible to increase high-school enrollments fifty per cent without going into the intellectual strata below those which are now reached. That is, so far as general intelligence is concerned, high schools could increase their enrollments fifty per cent without lowering their present admission standards.

There are, however, several defects in the foregoing reasoning. In the first place, the army tests have not been applied to a representative number of persons of fourteen to eighteen years of age and selected at random; we are not certain, therefore, that the mid-point of the C-group is the mid-point of intellectual strata

of persons of high-school age. Second, not all persons of the upper half of the intellectual strata desire to attend high school: an increase of fifty per cent in high school enrollment would probably necessitate going below the assumed mid-point of intelligence for a portion of the additional pupils. Third, if the high school were to increase its enrollment fifty per cent, the largest additions would have to be made from the lower half of the upper fifty per cent; this would be necessary because the results of the use of the army test in high schools has shown that the proportion of pupils in the upper strata was larger than the normal expectancy.

The psychologist's answer as presented up to this point is reduced to the following: An increase in high-school enrollment will include all the strata now represented. An increase will include more from relatively low than from relatively high strata, and will, therefore, reduce the general average of high-school intelligence. As psychological tests can now be used in the classifying of pupils, and, as skillful teachers are able to individualize instruction within classes, an increase in high-school enrollment is not incompatible with the maintenance of present high-school standards or even with a raising of standards. If, however, a school increased markedly its enrollment without making provision for individual differences, the increased enrollment would probably lead to a lowering of standards.

The psychologist has an answer also from the point of view of the conservation of talent. This aspect of the question is treated in the following quotation from Terman.

THE CONSERVATION OF TALENT⁴

BY L. M. TERMAN

Sir William Hamilton once said that the greatest thing in the world is man, and the greatest thing in man is mind. He might have added that except for character the greatest thing in the mind is intellect. Our instincts, our emotions, and our strivings have much in common with those of our infrahuman

⁴ *Proceedings and Addresses of the National Education Association*, LXI, 152-154. 1923. Abridged.

cousins of the forest and jungle; in our ability to think is found the mark of our kinship with the gods.

As a great psychologist once observed, civilization advances on two legs—invention and imitation. There are those who show the way and those who follow. Imitation is easy; but it takes the creative thinker to set new advances, whether in mechanics, science, commerce, literature, art, or religion. But for men and women of superior intelligence, society would be as helpless to advance as an automobile without a motor. A nation's intellectual assets are therefore the most precious it will ever have, and the principle of conservation will here find its most useful application.

Now there is reason for believing that a considerable part of the world's talent fails of fruition. That "genius will out" is but a dangerous half-truth, or less. Cattell has shown that Massachusetts in proportion to population produces 84 times as many men of science as Mississippi. That scientific ability is 84 times as prevalent in the germ plasm of Massachusetts as in the germ plasm of Mississippi seems entirely unreasonable. We prefer to believe that educational opportunity has helped to determine the relative output.

A research now in progress on the mental development of 300 of the most eminent men and women of the last few centuries reveals the fact that many of these geniuses owed their greatest opportunities to happy chance. Newton could never have made his scientific and mathematical discoveries without a university education, yet he owed his opportunity to enter Cambridge to the chance visit of an uncle. Liebig, the founder of physiological chemistry, was early withdrawn from school and apprenticed to a pharmacist. There, in a shed behind the apothecary's shop, he began the chemical experiments that later brought him his chance to enter a university. One wonders whether those experiments in chemistry would have been undertaken had he been apprenticed to a shoemaker or tailor instead of to a man who dealt in chemicals. So many instances of this kind have been uncovered as to raise the question whether in the case of many potential geniuses the happy accident may not have failed to happen. The phrase "unsung Miltons" is more than a poetic figure. Certainly it is true that children of superior ability are not always recognized in the schools. The defective child attracts attention by his inability to do the work and by his maladjustment to school discipline. The gifted child is likely to be submerged with

the masses because of his very adaptability to the school environment.

Another circumstance that has blocked the educational progress of gifted children is the superstition, given currency by Lombroso and others, that intellectual precocity is pathological; that bright children are prone to die young, become insane, or develop post-adolescent stupidity. So thoroughly has this superstition become imbedded in popular thought that even prominent educators are likely to assume that the child of high intelligence quotient must, *ipso facto*, be anæmic, nervous, conceited, eccentric, non-social, and a stranger to play.

So often have I seen this view expressed in perfectly good print that for a time I was myself inclined to suppose it must be true. Then followed a decade of experimental work in which I tested large numbers of children and studied their personal characteristics in the light of their intelligence quotients. It did not take long to discover that the facts were not in line with traditional theory. My subjects of high I. Q. simply did not answer to the book descriptions of typical Wunderkinder. As a rule they were physically well developed, active in play, normal in their social adjustments, and mentally well-balanced.

The answer of the historian. One need not go far back into the history of education to find the trend in regard to the extension of the privileges of education. Even within the modern period, Luther found it necessary to argue vigorously with his contemporaries to obtain a few hours daily for elementary-school training. Two and one-half centuries later Englishmen had to contend against strong obstacles for educational rights which are today commonplace. Not only were there difficulties in obtaining educational privileges: the classes of population to whom educational opportunities were open in the eighteenth century were trained in an attitude which is at variance with that now held. Finally, in the quotation from Hart are summarized the development of the modern educational ideal and a clear statement of the historian's answer to the question.

LETTER TO MAYORS AND ALDERMEN, 1524^o

BY MARTIN LUTHER

But, you say, "we can not bring all our children up to be students; we can not spare them; we need them at home to work for us." I answer, "I do not ask for the establishment of such schools as we have had hitherto, where our young men have spent twenty or thirty years over Donatus or Alexander, and yet have not learned anything at all. We have now another world, and things are done after a different pattern. And I ask no more than this, namely, that boys shall attend upon such schools as I have in view, an hour or two a day, and none the less; spend the rest of their time at home, or in learning some trade, or doing whatever else you will; thus both these matters will be cared for together, while they are young and opportunities are favorable. For else, they would haply spend tenfold this time in gunning and ball-playing. So, too, your little girls may easily find time enough to go to school an hour a day, and yet do all their household duties; for they now devote more than that to over-much play, dancing, and sleep.

It is very plain that all we need, is a cordial and earnest determination to train up our youth aright, and by this means furnish the world with wise and efficient men. For the devil is better pleased with coarse block-heads and with folks who are useful to nobody; because where such characters abound, then things do not go on prosperously here on the earth.

Hence, there is great need, not for the sake of the young alone, but also for the welfare and stability of all our institutions, temporal and spiritual alike, that we should begin at once, and in good earnest, to attend to this matter.

EXTENDING EDUCATION IN EIGHTEENTH CENTURY ENGLAND^o

BY H. T. BUCKLE

In the meantime, an immense change had begun, not only among speculative minds, but also among the people themselves. The increase of scepticism stimulated their curiosity; and the diffusion of education supplied the means of gratifying it. Hence

^o"Letters to Mayors and Aldermen," 1524. Translation in Barnard's *American Journal of Education*, IV, 437. 1857.

^o*History of Civilization in England*, Vol. I, 399. London, 1858.

we find that one of the leading characteristics of the eighteenth century, and which preëminently distinguished it from all that preceded, was a craving after knowledge on the part of those classes from whom knowledge had hitherto been shut out. It was in that great age, that there were first established schools for the lower orders on the only day they had time to attend them, and newspapers on the only day they had time to read them. It was then that there were first seen, in our country, circulating libraries; and it was then, too, that the art of printing, instead of being almost confined to London, began to be generally practiced in country towns. It was also in the eighteenth century, that the earliest systematic efforts were made to popularize the sciences, and facilitate the acquisition of their general principles, by writing treatises on them in an easy and untechnical style; while, at the same time, the invention of encyclopædias enabled their results to be brought together, and digested in a form more accessible than any hitherto employed. Then, too, we first meet with literary periodical reviews; by means of which large bodies of practical men acquired information, scanty indeed, but in every way superior to their former ignorance. The formation of societies for purchasing books now became general; and, before the close of the century, we hear of clubs instituted by reading men among the industrious classes. In every department, the same eager curiosity was shown. In the middle of the eighteenth century, debating societies sprung up among tradesmen; and this was followed by a still bolder innovation, for, in 1769, there was held the first public meeting ever assembled in England, the first in which it was attempted to enlighten Englishmen respecting their political rights. About the same time, the proceedings in our courts of law began to be studied by the people, and communicated to them through the medium of the daily press. Shortly before this, political newspapers arose, and a sharp struggle broke out between them and the two Houses of Parliament touching the right of publishing the debates; the end of which was, that both houses, though aided by the crown, were totally defeated; and, for the first time, the people were able to study the proceedings of the national legislature, and thus gain some acquaintance with the national affairs.

THE DEMOCRATIC MOVEMENT IN EDUCATION⁷

BY JOSEPH K. HART

(One of the streams) of influence flowing from the work of the naturalists of the eighteenth century was predominantly social. Not infrequently the educational ideal has become consciously social, for example, in the doctrines of Montaigne; and always, back of the most intellectual ideal, some more or less shadowy form of a social world can be seen, as, for example, in the "Heavenly Fatherland," the "Patria," of Thomas Aquinas. Scholasticism, even though working at intellectual tasks, felt itself furthering the interests of a social sphere, even though in another world. Classical humanism, tied up in the grammar schools and newer colleges of the early modern period, was working for the development of a real humanity. And the rising interest in elementary education in the last two centuries has grown out of, and back into, the modern world of commerce, industry, and democratic realization.^{7a} Of course all education everywhere, from the primitive folkway life down to the present, has been determined by some sort of a social ideal, unless, perhaps, some element of lingering tradition remains to make the system no longer intelligible to the new age. It *must* be true that all education is preparation for some sort of living in some sort of a social world.

The Democratic Ideal in Education. But never before in history has the task of education been so seriously considered as in the past century under the more complete realization of the meaning of all the revolutionary movements of the modern world. Religious revolution, from the Reformation down to the present, shows clearly that human life is moving on toward an ideal of freedom from the arbitrary dogmas and authorities of the past. Political revolution brings home to men continuously the fact that there is no halting-place short of the life of reason. Industrial changes are demonstrating that old distinctions between the educated and uneducated classes can no longer be maintained along economic lines. And the intellectual revolution is simply gathering up, organizing, generalizing, and applying these great realizations to the ever-widening spheres of living. Education must turn

⁷ *Democracy in Education*, 361-363. The Century Company, 1918.

^{7a} Dewey and Tufts, "Ethics," p. 165.

them all to the uses of living and the preparation for more intelligent living. The task of education has become inclusive. The ideal of education under these conditions of freed emotion, intelligence, and action is really *human* in a sense never dreamed by the Humanists. Economically, men must be free to work, to enjoy, and to share the values and meanings of life in a human way. Very well; let education take account of this aspect of the task. Politically, men must be free to deliberate, to know, to decide, to choose, and thus to help determine their own destinies and the destinies of one another in a human way. Very well; let education take account of this fact. Religiously, men must be free to worship or to refuse to worship, to "reverence their conscience as their king" in a human sort of way. Very well; let education understand this fact. And *intelligence* must become big enough to comprehend these freedoms which the soul of the race is determined upon. The ideal of education in a democracy must be inclusive enough to maintain an actual aim of freedom, while at the same time making use of all the materials of the past and all the achievements of the present to realize and criticize and make effective that aim of freedom.

The Machinery of the Democratic Ideal. Older ideals of education found their machinery in the traditional institutions of the community, especially the church. In large measure, schools have been handmaidens of the religious hopes of the race. To be sure, the governmental institutions have usually promoted educational enterprises of a more or less limited sort. But any sort of education less than a completely democratic type must find much of its support in special classes or groups. But with the coming of the free period in political life, and with the demand for the common education of the community, education has become more and more the necessity of all persons; and therefore it has become the task and responsibility of all persons, working through the state. The modern democratic program is a program of state promotion of public education. The state is the organized instrument for collective action, and education is the most thoroughgoing example of collective action. The state is therefore its proper instrument. Pestalozzi saw this. Headway in handling the destinies of the poor and ignorant depends upon making that problem a public responsibility. Horace Mann saw it, and decided that a school-house must be built within the reach of every boy and girl, without regard to economic considerations. Increasingly the modern world has seen

it, and laws have been passed making it compulsory for every child, within certain age-limits, to attend some sort of school. The task that proves too great for individual initiative or for private philanthropy becomes surprisingly simple when made a distinctive part of the public will through governmental action. The perpetuity of the state, the stability of institutions, the conduct of affairs—all depend upon intelligence, or so it is assumed, and in this sense “the public school is the hope of the country.”

The answer of the educational and social theorist. A decision regarding the question under discussion depends upon the nature of progress and the relation of education to progress. The suggestive excerpts from Todd and Wells provide a basis for forming conclusions upon both of these matters.⁸

EDUCATION AND PROGRESS⁹

BY ARTHUR J. TODD

To the idealist, as we have seen, this world's issues are at bottom mental, and progress is a two-dimensional movement, the elevation of ideals and the extension of justice and right. Liberty and justice, then, rather than mere contentment or happiness are its touchstones. Both idealists and intellectualists agree that drift can be turned into mastery only by willing it; that is, by taking thought humanity can master its fate and captain its soul. But it is a costly process: mastery comes only by intense effort along the lines of enlarging the zone of positive knowledge, developing critical intelligence, overcoming fear, particularly the fear of thinking resolutely, and harmonizing sentiment and thought. These are the real “costs of progress.” Since progress can come only through the ministry of thought (some of it definitely applied to problems of human advance, the rest to doing each sort of work in the best possible way, hoping that it or its by-products may function progress-wards), and since human energy is limited in quantity, it follows that thought and energy

⁸ All students of education should supplement their equipment by a careful reading of A. J. Todd, *Theories of Social Progress*, Chapter 33, pp. 505-534. The Macmillan Company, 1918.

⁹ *Theories of Social Progress*, 544-548. 1918. Reprinted by permission of The Macmillan Company.

must not be diverted into wasteful or needless channels—warfare, manufacture of extravagant luxuries, production for production's sake. This does not mean any sort of taboo on art, however. Art is not a luxury; it is a spirit, an attitude. It is what makes life worth while. It is not things but a life to lead. It is the mark of a fine discrimination of values; hence is inseparable from the life of a progressive group.

The critics of this view of progress contend that mere endeavor to advance is not enough, because progress is largely the by-product of unintentionally beneficent moves. Leisure and good intention, they say, will produce audiences and buyers, but not artists. Knowledge would appear to be under some kind of control, but cannot insure mastery over fate because, in the first place, great advances in knowledge depend upon individual genius, which is wholly accidental and incalculable. Secondly, there are surely limits beyond which human knowledge cannot pass, and those limits are already in sight. Thirdly, the uses and results of ideas cannot be controlled: witness the evil by-products of invention. Fourth, it is idle to set ourselves definite goals, for the world with all its phenomena is absolutely purposeless. To the first objection we reply that education and improved means of dissemination put both the results and the tools of science at the disposal of a constantly increasing number of men; which means that latent stores of human ability are more easily unlocked and that the area from which genius may be recruited is constantly widening. The second objection is answered by the plain everyday fact that the higher science climbs the wider stretches its possible fields of conquest. Physical science, psychology, and the science of society are still in their veriest infancy. The burden of proving the existence of an early limit to their career rests upon the objectors: so far they have merely stated their feeling without producing the proofs. The third and fourth objections are more formidable. We may admit that absolute mastery of our course is a dream rather than a fact, since the world of Chance overtops the little province of Law. But it does not seem impossible to control the main direction of movement. Surprises like the judicial interpretation of the Fifteenth Amendment may occur, but in the long run they are neutralized. In any event man must make the effort to control. To do otherwise is to sit down fatalistically and invite destruction. Bear in mind, however, that by effort I do not mean mere random activity, or good will, or kindly intention: I mean resolute intent, informed

by science. If we perish in spite or because of that effort, we perish, that is all. But we shall have had the satisfaction of trying to eliminate blind luck and to reduce the dimensions of "skittish fortune's hall." Meanwhile it is idle to trust to by-products of unintentionally beneficent moves. If they ultimate in progress it is always because somebody other than the immediate mover grasps the significance of the move and turns it to good account in terms of human value.

From another angle is thrust the objection that growth in knowledge will not insure progress because man is only slightly rational: sentiments, emotions, instincts, habits, predominate over intellect. This we admitted. Yet with the proviso that instinct is no safe guide, being altogether too crude. And feeling, while undoubtedly the final arbiter of conscious behavior, is equally blind unless illuminated by knowledge. Ignorance and superstition beget a nasty brood of sentiments. Imagination, likewise, needs feeding on fact. Moral perception is sheer relativity, and requires increasing knowledge to function at higher levels. Hence the office of education takes on a new significance. If it is to become an effective ally in social advance, it must add to its work of social control and passing on the mores the higher function of releasing mind and evoking intelligence. The educational system for a democracy should insure opportunity for mental output and social expression to all. It should spread the ideas of the fittest, the élite, the great minds, instead of coddling mediocrity and tradition. Social education, involves the twofold task of communicating a sense of social responsibility and of challenging individual mental power: on the one hand the "practice of associated action," the ability to subordinate oneself to a clearly perceived and worthy social purpose; on the other, the practice of independent thought even though it run into heresy, radical non-conformity, and deliberate rejection of petty canons of respectability. This is the excuse of having devoted so much space to the analysis of human personality. For society is mental integration, an integration of selves. Consequently when we speak of willing progress we mean really rearranging certain elements in the human self, evangelizing it, in the widest sense. But this cannot come about merely by moral preaching. Social organization, including economic, political, domestic, and educational institutions, will need readjusting to make ethical appeals more than empty words. This is not by any means Utopian, but calls only for the broader application and utilizing of certain familiar natural dis-

positions in men. You will not need to stand men on their heads to force them into a "social point of view." The impulse is there already and only needs encouragement, like prairie grass in April.

This long analysis will hardly admit of compression into a single formula: truth balks at such narrow limits, and men have learned to suspect the aphorism as an insidious half-truth at best. But as nearly as I can state what to me is the end of human progress, it would be somewhat in this form: that the final goal of all things, if they have or can be made to have a goal, is not some merely static perfection for God, society, or the individual; it is the identification of personal interest with social interest to an increasing degree. You may paraphrase this as consecrated intelligence, or as reconciling freedom of individual will with evolution of society, or as the identification of man individualized and man socialized. Anybody who has ever tried it knows that such a harmony does not come at one swoop. To believe so is to revert to the age of fable. Neither can humanity dodge the final responsibility for its own fate. To call in the gods is to court disaster. However you conceive the end of all things, man was surely placed on this planet to work out his own salvation. I am not at all sure that the inevitable and automatic end of the social process is increasing installments of justice and greater and greater elevation and expansion of the great masses of men. But I believe that it can be made an end by steady, persistent, preoccupation with the problem, and by that alone. Moreover, I hold it to be neither sacrilege nor lese-majesty to believe that with applied sociology and an education leavened by it rests this problem of harmonizing more closely through enlightened will the facts of social achievement and progressive social welfare.

THE NUMBER OF POTENTIALLY GREAT CITIZENS IN THE WORLD ¹⁰

BY H. G. WELLS

Unless we are to suppose that spontaneous outbreaks of supermen have occurred in the past, it is reasonable to conclude that the Athens of Pericles, the Florence of the Medici, Elizabethan England, the great deeds of Asoka, the Tang and Ming periods in art, are but samples of what a whole world of sustained security would yield continuously and cumulatively. Without sup-

¹⁰ *The Outline of History*, 588-589. The Macmillan Company, 1920. Reprinted by permission of the publishers.

posing any change in human quality, but merely its release from the present system of inordinate waste, history justifies this expectation.

We have seen how, since the liberation of human thought in the fifteenth and sixteenth centuries, a comparatively few curious and intelligent men, chiefly in western Europe, have produced a vision of the world and a body of science that is now, on the material side, revolutionizing life. Mostly these men have worked against great discouragement, with insufficient funds and small help or support from the mass of mankind. It is impossible to believe that these men were the maximum intellectual harvest of their generation. England alone in the last three centuries must have produced scores of Newtons who never learnt to read, hundreds of Daltons, Darwins, Bacons, and Huxleys, who died stunted in hovels, or never got a chance of proving their quality. All the world over, there must have been myriads of potential first-class investigators, splendid artists, creative minds, who never caught a gleam of inspiration or opportunity, for every one of that kind who has left his mark upon the world.

The answer of the social investigator. If, as Terman, Todd, and Wells assert, there is a direct relation between educational opportunity and the total human achievement, it should be possible to demonstrate this relation in a tangible way. Odin's investigation, which is summarized by Howerth in the following pages, was conducted for the purpose of finding out whether tangible evidence could be found in the realm of literary achievement in France. Clarke conducted a similar investigation in the United States and obtained similar results. Cattell has found an analogous relation between opportunity and achievement in science.

UNIVERSAL EDUCATION AND THE INCREASE OF GENIUS²¹

BY IRA W. HOWERTH

In his Farewell Address Washington enjoined the promotion of institutions for the general diffusion of knowledge for the reason, as he said, that "in proportion as the structure of Government gives force to public opinion, it is essential that public opinion be enlightened." Jefferson also and others of "the

²¹ *Educational Review*, LXIII, 50-56. January, 1922. Abridged.

fathers" emphasized the importance of general intelligence as a means of insuring the stability and safety of a free government. But the security of government is not the only or the chief reason why knowledge should be generally diffused. It is now established that the equalization of opportunity afforded by the general possession of extant knowledge is the primary and most effective means of promoting the progress and well-being of society. This was shown most conclusively, perhaps, by Professor Lester F. Ward in his book *Applied Sociology*, a book deserving a much wider reading than it has as yet received.

In this book the author, basing his arguments chiefly on the statistical investigations of De Candolle, Ribot, Jacoby, and particularly M. Odin, professor in the University of Sophia, into the nature and cause of genius, arrives at conclusions so important, striking and scientifically solid, that they should be generally known. He shows that genius is latent in all classes, that the efficiency of society may be indefinitely increased by increasing the number of men and women of talent and genius, and that the most effective way of achieving this end is by a general distribution of the extant knowledge of the world.

The fundamental premise from which the argument of "the greatest American sociologist" proceeds is that the true agents of human progress are the men and women of achievement, that is, artists, inventors, scientists, littérateurs—those who break new paths, invent new methods, and add some increment to useful knowledge, or in some manner enlarge the powers and possibilities of man. Such agents are relatively few, most people being engaged in merely copying or reproducing what they have done, that is, in performing the statical work of society. This will hardly be denied. As there can be no social advancement without achievement, the proposition would seem to be axiomatic.

It should be noted that this doctrine is not the same as that of Carlyle who declared that "the history of the world is the biography of great men." For the "great men" of Carlyle, the "heroes" of history, were men of action, military and industrial captains, the rulers and leaders of men. Ward holds that many of these men contributed nothing whatever to progress. They merely did what society wanted done. Even if they altered the map of the world, they may have left society no better than they found it. With him the real heroes, the promoters of progress, are the thinkers, many of whom have been maltreated or neglected.

Since men of talent and genius are the chief promoters of progress, the problem of artificially hastening the advancement of society is chiefly the problem of increasing the number of such men. Can this be done, and if so, how? To the first of these questions Ward gives an affirmative answer. Even if the amount of genius in society be a fixed quantity, he says, the number of effective geniuses may be increased by providing opportunities to make themselves known. Under present conditions full many a flower of genius is born to blush unseen. There are "mute, inglorious" Miltons, village Hampdens, and Cromwells who never achieve distinction for lack of opportunity.

This, of course, is contrary to the view of Sir Francis Galton, which is also the popular view, that genius creates its own opportunities, that it is irrepressible, that anyone gifted with genius will not fail to rise to eminence. This, to say the least, is an extravagant doctrine. Carried to the extreme it is patently absurd. For a genius could not win distinction without life and some degree of health. And it is easily conceivable, and undoubtedly often actual, that a genius is born under such unfavorable conditions that he is early deprived of both. To some extent, at least, manifestations of genius must be dependent upon conditions. Improved conditions necessarily promise increased manifestations of genius, and these will certainly show an increase in their number. It is generally agreed that genius is intellect plus character, and that it may be inherited. Galton devoted attention almost exclusively to the factor of heredity, and proposed a system of eugenics as a means of increasing the number of geniuses. This method, if it could be inaugurated, would be slow in its operation. It would have to be supplemented by improved conditions. No breeder has depended upon heredity alone to improve his stock. The working power of the genius must depend to some extent, at least, upon an opportunity to use his powers. Why not, then, attack the problem at this end? That is exactly what Ward has done.

The environment, that is, opportunity, brings out genius. Now what particular factor of the environment is most influential in this respect? What is it that constitutes the opportunity necessary to the manifestation of genius? To answer this question Ward, or rather Odin, for Ward follows Odin, analyzes the environment and studies the influence of the different kinds of environment—physical, ethnological, religious, local, economic, social, and educational, on the 6,382 great men of France who

lived in the five centuries preceding 1825. He subjects the lives of these men to a most searching analysis. The following are the conclusions reached:

"1. That while it would be an exaggeration to conclude that the action of the physical or geographical environment has been *nil* or only insignificant, its rôle in the production of men of genius has never been preponderant.

"2. That race differences have no appreciable influence in producing men of talent and genius, the civilized races, at least, being equally fertile in that respect.

"3. That the religious environment exerts a perceptible influence, but that it is impossible to determine how much.

"4. That density of population, while doubtless a potent influence in civilization, is not, in and of itself, the real factor, the great generator of men of genius. Cities, however, are more prolific of genius than rural communities.

"5. That the economic, social, and educational factors are the real determinants of the amount of genius manifested. These are the main factors which provide opportunity, so that the general conclusion reached is: Genius is dependent upon economic, social, and educational opportunity."

Some of the specific results of the investigation are especially interesting and significant. It was found, for instance, with respect to the influence of cities in comparison with rural districts, that the number of French men of letters born in cities was thirteen times as many as those born in the country. In Paris it was thirty-five times as many. The popular belief that most great men come from the country districts is wholly without foundation. The material and social conditions of the city are needed to stimulate and bring out the genius of mankind. "It is impossible," says Ward, "for a man of genius to attain eminence and remain all his life in the country."

As to the effect of the economic environment it was found that only nine per cent. of the eminent literary men of France were of limited means, while ninety-one per cent. were rich or well to do. "But as the poor form ninety per cent. of the population," quoting Ward again, "it follows that three per cent. of the population produced ninety-one per cent. of the talent. This means that the chances of success of a rich person are three hundred times

as great as those of a poor person endowed with the same measure of native genius."

The social environment was found to be about equally effective.

"In France during the modern period the upper classes—nobility, government officials, liberal professions, *bourgeoisie*—furnished ninety and two tenths per cent. of the eminent men of letters, while only nine and eight tenths per cent. were low born. But these latter constituted at least eighty per cent. of the population. It follows that the chances of success of a person belonging to the upper classes are nearly thirty-seven times as great as those of one of the same native ability belonging to the lower classes. But the nobility alone who constituted only about one per cent. of the population, furnished twenty-five and five tenths per cent. of modern French men of letters. The chances, therefore, are nearly two hundred times as great for a person belonging to the nobility, as for one belonging to the working class, all other things being equal."

Another popular belief that must be discarded is that genius is independent of educational opportunities. Of eight hundred and twenty-seven French men of letters whose educational opportunities were investigated, eight hundred and eleven received a thorough education in their youth, while only sixteen were self-educated. For an educated man, then, other things being equal, the chances of success are nearly fifty times greater than for the man who is compelled to educate himself. "Everything forces us to admit," says Odin, "that education plays a rôle not only important but vital and decisive in the development of men of letters. It acts not only upon average natures, but also, and with quite as great intensity, on talent and genius."

Summing up the result of the whole inquiry Ward says:

"About eighty per cent. of all distinguished persons are born in large cities, and nearly all go early to great intellectual centers; more than ninety per cent. of these belong to wealthy or well-to-do families and are exempt from all material concerns; nearly ninety per cent. of them belong to the higher social classes (nobility, public officials, liberal professions, business men); and ninety-eight per cent. of them receive a liberal education in their youth."

But the stimulating associations of city life, easy material circumstances (means for the purchase of books, for travel, etc., favorable family influences, social advantages, and instruction) are all educational—they all result in the acquisition of knowledge. Knowledge, then, generally diffused, is the essential means of increasing the number and products of genius, that is, of promoting social efficiency and enlarging the well-being of society. As things are, the fecundity of society is about two geniuses to the 100,000 of population. It can be made at least 200 to the 100,000.

Speaking of the resources of society, Ward says: "Only ten per cent. of these resources have been developed. Another ten per cent. are somewhat developed. There remain eighty per cent. as yet wholly undeveloped."

What, then, is the primary function of our schools, and of our entire educational system? It is to place before all the members of society the opportunity for development that knowledge affords. Schools are the social instruments for the general diffusion of knowledge, a knowledge of nature's laws and principles, generalized knowledge, such knowledge as will afford all, the poor as well as the rich, members of the working class as well as members of the leisure class, an opportunity to reveal the powers with which they are gifted by nature.

The idea so often expressed in our academic circles that the purpose of our colleges and universities is to develop thinkers, the exceptional young people of the country—that only such persons can profit by college and university opportunities—is evidence that the oligocentric view of society still prevails. All should enjoy such opportunities, or at least should enjoy what our higher educational institutions should provide. It is now complained that some will not "take" an education. One thing is sure, and that is, that all members of society will profit by the general diffusion of useful knowledge, and this diffusion should be a conscious end of all educational effort. We still hear talk of the "inferior classes," and many deplore the fact that society is recruited from the lower stratum. But, as Ward truly says, "So far as the native capacity, the potential quality, the 'promise and potency' of a higher life are concerned, those swarming, spawning millions, the bottom layers of society, the proletariat, the working classes, the 'hewers of wood and drawers of water,' nay, even the denizens of the slums . . . are by nature the peers of the boasted 'aristocracy of brains' that now dominate society

and look down upon them, are the equals in all but privilege of the most enlightened teachers of eugenics." It is, therefore, a great mistake in higher education to focus attention on a few of the youth of society and ignore all the rest.

But the significance of all this lies chiefly in its bearing upon the practical expediency of making an attempt in this country to bring to fruition our entire crop of genius, so far as we can do so by providing generally the requisite educational opportunities. As all know, in our different commonwealths, and often in the different parts of the same commonwealth, there are the greatest variations in the length of the school year, school buildings and equipment are widely different, library facilities are often entirely wanting, there are different requirements as to attendance, teachers are unequally prepared and unequally paid. In short, it depends upon where a genius is born and lives whether he becomes effective as a social force. There are many parts of the country in which the geniuses who happened to be born there have been lost to society, because

"Knowledge to their eyes her ample page
Rich with the spoils of time did ne'er unroll."

A single genius discovered and developed through the development of a national educational system and the approximate equalization of educational opportunities that ought to result from it, might be worth more to the nation than the system would cost. But the probability, rather the certainty, is that such a system would bring out a multitude of geniuses and thus multiply the progressive forces of society many fold.

The answer of the fiscal expert. If, as Professor Seligman maintains, the educational question has become primarily a fiscal question, the status of school support and prospects for additional school revenue is a matter with which no teacher or school officer can neglect to acquaint himself. Several aspects of the question of ability to support schools are presented in the following pages: adequate use of moneys which are provided for educational purposes, the rising cost of education, the importance of adequate financing of education, means for financing education, and a review of national assets in connection with a statement of educational needs.

CAN THE NATION AFFORD AN ADEQUATE SCHOOL SYSTEM¹²

The burden of school costs did not increase during the war decade. The percentage of the Nation's income devoted to education in 1918 and 1920 was practically the same as that expended in the years preceding our entrance into the World War. The figures in Table II give little support to the belief that there was a tendency for the relative burden of school costs to increase between 1910 and 1920.

TABLE II
NATIONAL INCOME AND SCHOOL COSTS

YEAR	NATIONAL INCOME	EXPENDITURES FOR EDUCATION	PER CENT OF INCOME SPENT FOR EDUCATION
1	2	3	4
1910	\$31,400,000,000	\$426,250,434	1.36
1912	33,000,000,000	482,886,793	1.46
1914	32,200,000,000	555,977,146	1.67
1916	45,400,000,000	640,717,053	1.41
1918	61,000,000,000	763,678,089	1.25
1920	70,000,000,000	1,036,151,209	1.48

It is true that school costs measured in dollars have increased in recent years. A dollar, however, no longer has its pre-war value. The inexorable effect of the depreciation of the dollar has not been felt by the school alone. The operating costs of commercial concerns have greatly increased as a result of the same factor. In order to command a day's labor in 1920, \$6.66 was necessary when \$3.00 would have obtained the same amount of labor in 1914 according to a study by the Russell Sage Foundation. The cost of building material similarly increased and requires double the expenditure per unit of construction.

The purchasing power of the money expended for schools was less in 1920 than in 1913. Public schools cost \$521,546,375 in 1913. In 1920 the public schools cost \$514,604,834, stated in 1913 dollars. Public school officials when they went out into the open market to buy human services and the material equipment necessary to maintain schools were \$6,941,541 poorer in 1920 than in 1913.

¹² *Research Bulletin of the National Education Association*, I, 294. September, 1923.

The decrease in the purchasing power of the money appropriated for the schools would have had a far less harmful effect if the purchasing power of the money available to other National groups had not increased. If the school superintendent, the manufacturer and the merchant had all lost equally in their ability to buy, the schools relatively would have been as well off as ever. But when the money at the command of the schools loses in purchasing power while that at the command of other institutions increases, the results are that the best human material goes into other fields of work than teaching and other buildings than schools get first call on labor and building materials.

THE FINANCING OF EDUCATION¹³

By EDWIN R. A. SELIGMAN

I

Every civilized country is to be judged by the relative amounts expended for education. If we take a broad view of history, we find that there have been no less than four stages in the development of governmental functions. In the earliest stage we have only the repressive function of government. When disorder occurs, the community is called upon to suppress it: when disease and plague appear, the government does its utmost to combat it: when war breaks out, the government is concerned to bring it to an end as quickly as possible. In the second stage of development, we find the preventive functions of government appear. It is not so much to fight the famine as to prevent it that we are now concerned: it is not to check the disease but to make its appearance impossible: instead of simply incarcerating the malefactor, we try the more modern method of preventing the appearance of the criminal. The preventive functions of government are more difficult and more costly. In the third stage of progress, we come to what may be called the period of ameliorative functions. The government is now concerned not so much with preventing evil things as it is with improving conditions and making them better than before. The government now not alone seeks to prevent famines, but tries to improve agricultural conditions: it not only prevents disease, but it endeavors in countless ways by its modern health department to make the sanitary conditions

¹³ *Educational Administration and Supervision*, VIII, 449-456. November, 1922. Abridged.

better than they were before: it not alone seeks to prevent the criminal from appearing, but it endeavors to turn the criminal into a law-abiding and decent citizen. The ameliorative functions of government call for far more of sustained effort and financial outlay. Finally, we reach the fourth stage of government activity, at the very outset of which we find ourselves at present. This is the period of what might be called the constructive functions of government. We do not simply build upon the actually existing situation and improve it, but we now seek to create entirely new conditions and to make something exist which never existed before. Although illustrations may be found in almost every phase of government effort at present, the chief example is to be seen in the domain of education. The very word education means the drawing out, the leading out of something new, the elaboration of the individual and the group mind of something which did not exist before. But just because of this fact, education is the most definite of all governmental functions. I wonder how many have ever read the admirable book of Mr. G. D. H. Cole, the English Guild Socialist. With his economic views I do not find myself in harmony; but with his high and lofty conception of what education ought to mean, I fancy we can all agree. We have even now only a faint adumbration of what can really be accomplished by education. If this is true and if education is a manifestation of the highest stage of community effort, it is also true that it calls for the severest sacrifices. Perhaps the day will come when the greatness of the nation will be measured, not by the tens of millions spent for our battleships, but by the hundreds of millions spent for the schools.

II

Since then the needs of education are so pronounced, it is worth while to consider for a moment why the financial embarrassments have grown. This is due, in the first place, to the fact that education, like so many other functions of government, has been slowly progressing from private to public auspices. At the beginning, education, like the high roads, like justice, like protection, was entirely a private function. But while the streets, the army, and the courts have now become exclusively public in their nature, education has gone through only a partial development. We still find private schools, private colleges, private universities, and it is undoubtedly true that the impetus to modern educational

reform has often come originally from private initiative. The kindergarten was for a long time private before it was adopted into the public system. The same is true with the vocational schools and with many other forms of pedagogical activity. The important point, however, is that with the passage of time, more and more phases of education have been taken over from private to public management. We find, moreover, continually greater manifestations of this public activity: Public textbooks, free dental and medical service and even free lunches have been added in not a few places. The net result has been an extraordinary rise in the expenditures for education.

The next point is a consideration of the fiscal principle governing these outlays. The educational activity of government has gone through the same phases as that of the other activities. The high roads, for instance, were originally run for a profit and only at a much later period was the practice introduced of just about covering cost, the so-called free principle. Finally, it is only in the most recent period that toll roads have been abolished and that the principle of gratuity has been established according to which no charge is made for the use of the roads, the expenses being defrayed out of the general revenue of government. In the same way justice, when taken over by the government, was originally a source of revenue to the early monarchs. At a much later period, the principle of fees was introduced: Even in the eighteenth century Adam Smith advocated the payment of judges' salaries by fees in order to stimulate their activity. It is only in very recent times that the province of fees has been restricted and that the court expenses, especially the salaries of the judiciary, defrayed out of the general fund.

The same is true of education. Even when education was assumed by government, it was for a long time run on the principle of profits. This was succeeded by the régime of fees, which is still the custom in the primary education of some of the European countries and in the higher education in some of the American states. The final principle of gratuitous service or free education was first introduced in the schools of Holland and in the public school system of some of the American colonies. Step by step the gratuitous principle has spread from one form of education to another, as a result of modern democracy. As a consequence, the expenditures have steadily mounted.

In the third place, we have to consider the ways and means of covering this increased expenditure. Here again we notice an

interesting fiscal development. The sources of early revenue in every government were very different from those that exist today. At first, in fact, contributions to the support of government were entirely voluntary and it was not until the drain upon private benevolence and charity became too great that the voluntary contributions were converted into compulsory contribution. We know the exact date when the transition occurred in each of the American colonies, and when the system of appeals to those "whose heart is willing" fell upon such deaf ears that a change had to be made. But even then, and for a long time, most of the public revenues came from other sources. Almost down to the end of the eighteenth century the colonial revenues were derived from fees, from land and quit rents, from special assessments, and, above all, from lotteries. The latter was an especially favorite method. Many a church and many a school was started and supported by public lotteries. The very institution with which I am connected, Columbia University, was made possible, as King's College, through a public lottery. Even when compulsory contributions were initiated they assumed the form, for a long time, of indirect payments, more or less in return for supposed government activities. Direct taxes upon the individual were sporadic and slight, and the burden was scarcely felt.

In modern times, however, all this has changed. Lotteries have disappeared; the land revenues of government have become negligible; the relative importance of fees has greatly diminished; the chief reliance of government today is upon taxation regularly levied upon the individual.

The four reasons, therefore, why expenditures for education have become such an important fiscal problem are: First, the growth in the scope of education itself; second, the transition from private to public education; third, the change in the fiscal principle of profits or fees to the principle of gratuitous service; and fourth, the virtual disappearance of the earlier forms of revenue, with almost sole reliance upon taxation.

III

The above statement is, however, not entirely sufficient to explain the present situation. For while the amount to be raised by taxes has indeed increased, the readiness of the average citizen to submit to public charges has also undergone a notable development. There is far more sense of public collective responsibility at the present time than in former generations: There ought ac-

cordingly to be little difficulty in raising from each individual his share of the public expenses. While the expenditures for education have indeed increased, by leaps and bounds, the wealth of the community has also multiplied. In fact, at no time in the history of the world have there been such prodigious strides forward in the accumulation of wealth and in the progress of individual well-being. There must be some other explanation of the present situation.

To the economist and the student of finance, the explanation is simple. The original form of direct taxation in the country was the general property tax. It was a system which responded fairly well to the needs of the day and to the demands of the government. In a more or less primitive community a man's wealth is largely measured by his property. Today we yet say that a man is worth so many dollars; whereas in England we speak of a man being worth so many pounds a year. In those early days when there were neither very rich nor very poor, when everyone worked and when almost everyone possessed a modest competence, general property was the best indication of a man's wealth and therefore the most creditable measure of his ability to pay taxes. Consequently, until almost the period of the Civil War the public revenues kept pace with the increase in property and there was no problem of educational finance.

Beginning, however, shortly after the Civil War in our most advanced states, and thereafter slowly spreading to other parts of the country, a complete fiscal revolution became visible. This was a result and concomitant of the great economic change known as the industrial revolution, the transition of the economic system from that of a primitive agricultural community to that of a highly diversified industrial community. We now live under what is known as the factory system or the age of the machine, based on a revolution in chemical and mechanical methods. The new forms of business enterprise, moreover, have brought with them the appearance of the corporation and the development of corporate securities.

As a consequence, the old general property tax no longer sufficed for more modern needs. While real estate indeed remained, personal property changed in its constituent elements. There was, relatively speaking, less and less tangible and visible personality and more and more evidences of legal rights. Slowly but surely personal property accordingly slipped out of the assessment lists with a resulting increasing burden upon real estate.

Not alone did the general property tax thus gradually lose its efficacy but the newer business conditions caused a transition in the criterion of wealth from property to profits or earnings or income. In modern times there are large classes of individuals who live upon their salaries or earnings and who spend most of what they earn, thus accumulating comparatively little property. A property tax would leave scot free the great lawyer or physician or architect or engineer or railway president who spends most of his earnings. Furthermore, under modern economic conditions, the prosperity of a business man is no longer judged by his property. The mutations of modern life and the variations in the turnover have caused even the business man to apply the yardstick of earnings or income rather than of stock-in-trade. Other reasons, for which there is here no time, might be mentioned to explain why property has been supplanted by income or earnings. In order to realize this change, we have only to look at the financing of the recent war compared with that of former conflicts. In the Civil War the income tax was almost negligible in its contribution to the war expenses; in the War of 1812 it did not exist at all. In the recent war, however, the major part of our entire colossal outlay was derived from taxes on income and profits.

It is easily seen, therefore, how the present educational embarrassment has arisen. In all those states which still cling, as most of them do, to the general property tax, the increasing wealth of the community is no longer tapped by the revenue methods. With a base of taxation continually receding and diminishing, it is only too apparent that the burden of the general property tax has become unendurable.

IV

What, then, are the remedies? I should say that they consist of two, economic and political. The economic remedy is to develop a fiscal system which will respond to modern needs, which will tap the resources of the community according to the relative ability of the individuals. If we look at the most advanced states we find that this fiscal reform has assumed three forms:

1. The taxation of individual incomes.
2. The taxation of business.
3. The taxation of inheritances.

In New York, for instance, the personal income tax yields, at a very low rate, from 35 to 40 millions a year. The new business tax, also based on a criterion of earnings for the most part, yields 45 millions and the inheritance tax yields over 20 millions a year. What has been done in New York has also been accomplished in Massachusetts and even in some of the states of the middle West like Wisconsin. California, which stands at the head of educational finance, has been able to accomplish a similar result by developing a modern system of business taxation. Even in Delaware the recent introduction of the income tax has been due almost entirely to the needs of public education.

While this economic and fiscal change is of the first importance, there is also a political reform that is needed. All expenditure was originally local; all revenue was originally local. It is quite natural that there should have sprung up the idea of home rule and the feeling that roads and the schools ought to be supported out of local revenues. The economic transition, however, has proved the falsity of this early method, just as in the federal and state government modern conditions have shown the shortcomings of that other shibboleth, the separation of governmental powers. Modern earnings and incomes can no longer be cabined and confined within local limits: For modern economic enterprise has become not alone state-wide, but also nation-wide and even world-wide in character. The consequence has been a great differentiation between localities. While some localities, like the great industrial centers, are teeming with wealth, others in the agricultural districts are woefully deficient. The state has been compelled to come to the aid of the localities in the construction of modern roads. While the state government is making indeed some contribution to the communities for education, the chief support is still derived from local sources. Thus we find that as individuals under the modern dispensation differ in wealth far more than in former times, so do our local communities. Just as there are many individuals who are unable to contribute to an income tax, so there are many local communities that are unable to maintain adequate school facilities.

What is needed is a redistribution of governmental functions and of governmental revenues. The chief source of local revenue must always remain, for obvious reasons, real estate—the non-elastic element in public revenues. The elastic form of modern revenues is to be found in the state-wide system of income, business, and inheritance taxes. It is only proper that the locality

where the needs are greatest should secure an increasing share of these state-wide revenues. If this is done, the day of the impoverished community in the small red schoolhouse will go and the distribution of state funds to localities will take place not on the antiquated basis of assessed valuation or population, but on the new and improved basis of educational needs which will vary from locality to locality. An educational system local in character and support is incompatible with an economic and fiscal system state-wide in its nature.

We conclude, then, that what is needed above all is a realization of actual facts. Let us no longer, like the proverbial ostrich, put our head in the sand and refuse to look what stares us in the face. The wealth is here; the educational needs are here; all that is necessary is to bring about a correlation between the two. Let us determine no longer to live in a fool's paradise of outworn theories and indefensible shibboleths. Let us grapple manfully with the real problem and realize that in modern times the educational question has become primarily a fiscal question.

Principles derived from a consideration of American educational policies. America is *experimenting* with free secondary education for the masses.

Up to the present time the high school has developed by a slow and often irrational evolutionary process.

Equality of educational opportunity for all should be provided.

Belief in the principle of equality of opportunity for everyone has led to a strong, though often irrational, interest in education.

Diversity of education needs, talents, and interests requires diversity of educative opportunity. Otherwise, there is no equality.

America's founding of a new high school each day for twenty-eight years necessitates increased attention to administrative and fiscal aspects of education.

The history of education provides a striking illustration of the extension of the privilege of education as governments have become more democratic.

The desirability of extending educational privileges has been accepted as a general principle.

The world's issues are fundamentally mental.

Progress depends upon increasing the depth and extension of thought to larger numbers of persons.

Progress consists of an increasing identification of personal interests with social interests. Such a process of identification depends upon education which is universal in its benefits, administered by proper persons, and based upon suitable content.

The great periods of human history provide samples of what might be made continuous if opportunity were offered to everyone.

The production of geniuses is dependent upon educational conditions. The recognition and success of geniuses depend upon an intelligent citizenry.

Financial solvency and educational sincerity demand that patrons and pupils understand the purposes and problems of the high school.

A civilized nation is judged by its expenditures for the constructive training offered to its citizens and prospective citizens.

The growth and realization of educational needs and activities have made of the educational question mainly a fiscal question.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Compare the statement of America's challenge in secondary education in this text with other similar statements which you have heard or read. Cite and evaluate criticisms of America's acceptance of this challenge.

2. How can the advantages of secondary education be greatly extended without causing a dearth of common laborers?

3. In attempting to train all comers, America may merely raise the ability of the average man. Discuss the possibility of an unsuspected danger in this matter.

4. What does America know about higher education which it is attempting to foster?

5. As Dr. Judd anticipated, he has been criticized for his reference to secondary education in America as an experiment. Prepare a line of defense for his point of view.

6. How can Dr. Judd's point of view be maintained together with a policy of expansion of secondary education? What advantage is there, consequently, of accepting his point of view?

7. Compare the medians for sizes of high schools in the United

States as a whole and in Massachusetts, California, Montana, and Virginia. To what extent do differences in population account for differences between the medians for different states?

8. Upon the basis of the computations of Bonner, how large a high-school budget is necessary for the maintenance of a school of 200 pupils for a year of 180 days? How many dollars would be spent for "instruction?"

9. If Terman is correct in regard to the conservation of talent, what can America do about the matter?

10. To what degree has the extension of political privileges in America been paralleled by an extension of educational privileges? What benefits will the public receive if education is still further extended?

11. By what criteria can you distinguish between progress and mere activity? (For example, in case of inventions, war, learning, etc.) What relation exists between progress as you conceive it and educational opportunity?

12. How do we know but that many persons of a high order of intelligence are now being stifled by unfavorable surroundings?

13. Compare the findings of Odin with popular opinions about the matters which he investigated.

14. Can America afford a further expansion of secondary education?

15. Find evidence in support of the "principles" derived from the discussions contained in this chapter.

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CHAPTER II

THE DEVELOPMENT OF AMERICAN POLICIES IN SECONDARY EDUCATION

Types of American secondary schools. The history of secondary education in America shows that there have been three periods of development, each of which is characterized by a certain type of school. During the first of these periods, the colonial period, the Latin grammar school was the prevalent type of secondary school. During the latter half of the eighteenth century a second type of school, the academy, was developed. This became the most important secondary school during the first half of the nineteenth century. During the nineteenth century the third type of secondary school, the high school, was developed. The twentieth century is witnessing two extensions of secondary education; the one downward and known as the junior high school; the other upward and known as the junior college.

The first of these types of schools, the Latin grammar school, was a part of America's educational heritage from Europe. This school was a direct lineal descendant from the Renaissance. Such schools as that of Vittorino da Feltre in Mantua popularized this form of institution. In Germany it became, under the leadership of Johann Sturm, the classical Gymnasium in which boys were taught knowledge, eloquence, and piety by means of the writings of the Greeks and Romans, of the church fathers, and by means of the bible. Dean Colet was the pioneer, who, at about the same time, brought this form of secondary education to England. In England, as in Italy and Germany, the writings of the Greeks and the Romans together with certain religious writings became the course in secondary education. The English model, which was known as the Latin grammar school, accepted boys of various

ages and with varying amounts of training and prepared them for the university.

As colonial policies were shaped by Europeans, the schools, naturally, were organized so as to conform with European educational institutions. Wherever English settlers established secondary schools, they founded Latin grammar schools. As their name implies, these schools were conducted for the purpose of teaching Latin. Greek was also taught after Latin had been pursued for two or more years. The students of these schools were required not only to learn Latin but also to use it. For example, it is recorded that in the case of the New Haven school the boys who annoyed their teachers by speaking English were sent home. In private as well as in public, boys were enjoined against the use of English, except as special privileges were granted to them. In spite of the sturdy efforts to create a miniature Roman state in each school, it is also recorded that a delegation of Dutchmen from New Amsterdam once had great difficulty in finding in New England any grammar-school boys who could converse in Latin. If, however, the boys failed to master conversational Latin, their failure cannot be attributed to the lack of carefully wrought textbooks designed especially for the everyday needs of the student. Dictionaries had features similar to modern French-English dictionaries; these books contained Latin words ranging from the dignified to the vulgar and included many idiomatic usages. Conversational drill books possessed simple content which may once have been suitable for strong pioneers; Garretson's *Exercises*, a second-year textbook, attempted to make Latin easy and delightful by asking boys to translate such melodious phrases as the following: "My dear cousin offered me a kiss" and "The pretty boy sits between pretty girls." The main course consisted, however, of stronger potions which were found in Ezekiel Cheever's famous grammar—*Accidence*—and in the classical works of Cæsar, Cicero, Virgil, Ovid, Horace, and King's *History of the Heathen Gods*—a work which was sometimes "made" into Latin by the boys.

Such a course pursued for four or more years together with a liberal quantity of Greek prepared intelligent boys for their collegiate work in the literature of these languages. Some of the most brilliant succeeded so well in their academic pursuits that when they emerged from school, they were equipped somewhat as Cotton Mather was—they could write better Latin than English. Of course, many boys spent from two to four years in such studies, with little benefit.

Many Latin grammar schools were very indefinite in their requirements for admission and the length of time for completion of courses. One of the best schools, the Boston Latin School, which was founded in 1635, had by the beginning of our national period, 1789, evolved such requirements as the following: All candidates for admission must be at least ten years of age, and must have had thorough training in English grammar; they shall attend the school not to exceed four years during which time they shall have become fully prepared for college work in Latin and Greek. The books catalogued for the four years of this school were exclusively Latin and Greek textbooks.

The Latin grammar schools of America like those of England were fee schools and were for boys only. Girls and poor boys sometimes received elementary schooling, but secondary schools for girls were not established until the academy's period. Boys whose parents were poor had to wait until the nineteenth century for the abolishment of the tuition fees.

Colonial educational policies. The colonies developed three different educational policies. In the southern colonies the *laissez-faire* policy was predominant in the realm of secondary education; the adoption of this policy caused educational opportunity to depend upon economic status. In the central colonies the parochial-school plan was the most prominent; the adoption of this plan made the school subservient to the church and, when denominational divisions arose, led to a disastrous scattering of school funds for the support of weak church schools. In New England, a public school policy was followed; this policy led to public

control and, under the provisions of the Law of 1647, to the establishment of many precedents which still influence educational administration and support. None of these policies are, however, entirely distinct within the territorial limits assigned above to them. School practices throughout the colonial period varied so widely that typical policies and forms of procedure are hard to find. An attempt to fasten policies upon certain colonies and entirely detach them from all other colonies is likely to be misleading. For example, the church was not without influence in the formulating of the policies of New England, nor were the public officers of the middle colonies without power in parochial-school territory. The divisions suggested are, therefore, valuable only in emphasizing the predominant characteristics of three sections of colonies.

The readings in this section of the present chapter present evidence of the ways in which colonial education developed. Professor Jernegan's article is valuable in this connection especially as an example of the use of caution in making historical interpretations and as an account of general educational conditions; the implications of this article are quite as valuable as the explicit statements contained in it. Professor Knight summarizes the effect of the *laissez-faire* policy. Professor Kilpatrick's discussion of schools under the parochial-school plan calls attention to the many inter-relations of church and state in the conducting of schools. Even though the Massachusetts Law of 1647 was not enforced throughout the colony, it became a model for other New England legislation besides inaugurating a new attitude toward and plan for secondary education.

COMPULSORY EDUCATION IN VIRGINIA¹

BY MARCUS W. JERNEGAN

If one turns to the existing accounts of the history of American education in the colonial period of our history, he will observe that many writers assume that most of those persons who received

¹ *The School Review*, XXVII, 405-425. June, 1919. Abridged.

any instruction attended organized schools. That such an inference is entirely erroneous is easily realized by the performance of a simple arithmetical problem—namely, that of dividing the population at any given date by the number of schools known to have been in existence at that date. The percentage of persons receiving a part of their education in such institutions would be highest in the New England colonies, but even in this section it would surprise most students if they were aware of how many learned how to read or write through some other agency than organized schools.

If we pass beyond New England to the middle and southern colonies, it is safe to say that a still smaller percentage of the total number who secured the rudiments of an education received it in an organized school. It is doubtless true that there were many private schools whose existence we shall never be able to prove, but, even allowing for this possibility, it is not believed that the point made above would be greatly modified. It is therefore important to stress the agencies other than schools if we are to gain a proper perspective of the evolution of American Education. The well-known tendency to read into the past the ideals, and even the institutions, of the present is responsible for a very common fallacy—that of mistaking the special for the general fact. Contemporary conditions, not later theories, govern and explain the development of institutions; and the general fact, the typical institution, cannot vary widely from the general conditions, which must in the long run determine what is general and what exceptional.

During the colonial period much the larger proportion of the people at any one time were living under frontier conditions. Wherever such conditions were the controlling factor, organized institutions, such as the church and school, were not general, except perhaps in portions of New England, notwithstanding the assertions of our enthusiastic and imaginative racial, sectarian, and other types of historians, who often assert the contrary but fail to produce the evidence. When a given area ceased to be governed by frontier conditions, then organized institutions gradually became the general rather than the special fact. Frontier conditions imply, among other things, a sparse population; absorption of energies, time, and thought in satisfying material needs—shelter, subsistence, and protection; occupations largely connected with agriculture or extractive industries; lack of easy means of communication, and hence isolation, particularly in the

late fall, winter, and early spring months; and finally, conservation of labor, even of children, during those months of the year in which the farming operations are pressing. If we realize also the weak cultural ideals, inevitable and inherent in frontier groups, and the impossibility of locating organized schools so that any large proportion of those of school age could be reached, under such conditions, even supposing the desire to exist, we can easily see that a great many persons who learned how to read and write must have taken advantage of other agencies than schools. Two were of the greatest importance—namely, home instruction given by the parents, and the apprenticeship system, instruction given by the master or his agent.

Both of these agencies were in common and voluntary use in every colony. Voluntary education through apprenticeship occurred when, through custom or agreement, an indenture was drawn so as to secure for the apprentice book or religious instruction, with or without instruction in a trade, and his maintenance, the latter being one of the main purposes of the system in its historical development. No special law concerning the enforcement of the indenture was needed in such cases, for indentures were almost universally looked upon as contracts, became a matter of public record, and hence were enforceable in the courts. In some of the colonies parental education was made compulsory through laws passed to this effect—as in New England. In this study we are concerned with the system of *compulsory* education in the southern colonies, Virginia in particular, as it was instituted by law through the agencies of parents, guardians, and overseers, and particularly through masters and mistresses in connection with the system of apprenticeship.

The problem then for Virginia, and for other colonies, was much the same as that which had confronted Old and New England, only it was a more serious and pressing one. That problem was first economic—how to protect the parish from the burden of maintaining poor children; how to provide for an artisan class skilled in trades and needed in the colony; how to reduce idleness and unemployment, and how to add rapidly to the wealth and property of all the people. The second aspect of the problem was educational. The natural conception of the relation of the state to education was largely *laissez-faire*, on the theory that this was a matter to be intrusted to private initiative or the

church. But the pressure of a rapidly growing class of poor children, and the consequent expense to the parish, coupled with the difficulty of obtaining the much-needed supply of artisans, forced the state to modify this conception. Poor parents could not educate their children, and some degree of book education was desirable for artisans in order that they might be efficient in their trades. Two influences also promoted this conception. The period from the Reformation to the great Civil War is marked, in England, by the stimulating effect of religion on education—especially the efforts of competing religious denominations and their anxiety to increase their power through instruction in the peculiar tenets of their creed and in their catechism. In states where there was union of Church and State—the Established Church in Virginia—this influence was strong. A second influence was the beginnings of the humanitarian movement, as exhibited in philanthropy, the desire to give poor children some opportunity for education, best illustrated in the work of the Society for the Propagation of the Gospel in Foreign Parts.

All these forces led to the conception that the state was responsible, to some extent at least, for the education of certain classes of children. From an economic, religious, and humanitarian standpoint, it was undesirable that a large body of illiterate laborers, tradesmen, or farmers should be allowed to develop. From a purely selfish standpoint, the money cost, the state was compelled to take some action. As in the New England colonies, and perhaps influenced by their legislation, the system of apprenticeship seemed to be the most effective agency to gain the ends desired, with the least expense, loss of time from labor, and, in the case of the southern colonies, the least interference with their general attitude toward the relation of the state to education.

It is apparent that Virginia not only recognized her responsibility for the compulsory education of the classes of children mentioned, but passed a series of notable acts designed to accomplish the purpose. While they are not so elaborate as those of the New England colonies for the seventeenth century, they are in some respects above it. For example, the law required that after 1751 *all* orphan and poor girls apprenticed should be taught to read and also to write. No New England colony, after 1710, required *all* girls apprenticed to be taught to read and write. The acts cited show that we may fairly assert that Virginia es-

tablished a compulsory system of education for these special classes of children. The laws are mandatory, indicate the machinery for enforcement, name the responsible officers, provide penalties for negligence of parents, guardians, and masters—namely, removal of the child—and, in the case of negligent justices, provide a money penalty, or its equivalent in tobacco. The central feature of the system was the county court, composed of the justices of the peace. It was entirely responsible for the workings of the laws respecting orphans. In the case of poor and illegitimate children the church wardens were about equally responsible with the justices. There is thus the same tendency as in New England, that of making special officers of local units the responsible persons for carrying out the law. There is also the same tendency to increase the amount of education required for boys and girls apprenticed, and to place less emphasis on religious instruction in the eighteenth as compared with the seventeenth century. We shall see from the evidence in court and parish records that these acts were enforced, to some extent at least, but how effectually or universally it is difficult to say. But this observation can be made quite as truly of the legislation of the New England colonies.

COLONIAL EDUCATION IN NORTH CAROLINA²

By E. W. KNIGHT

Although North Carolina developed before 1860 the most creditable system of public education to be found in any of the States which seceded from the Union, her intellectual and educational growth was very slow during the colonial period.

The need for schools and education was not keenly felt by those in authority. The educational philosophy of seventeenth-century England, "that the great body of the people were to obey and not to govern, and that the social status of unborn generations was already fixed," was now, as at a later time, widespread and persistent. This was the philosophy, not only for the colonies, but for the mother country as well. As late as the beginning of the nineteenth century it was held by many that the surest way to serve the public welfare was by keeping great

²*Public Education in North Carolina.* Houghton, Mifflin Company. Pp. 1-3.

numbers of the people "ignorant as well as poor. Knowledge both enlarges and multiplies our desire, and the fewer things man wishes for, the more easily his necessity may be supplied." This is an argument which has been frequently used to defeat universal public education.

MIXED SUPPORT AND CONTROL OF COLONIAL SECONDARY
SCHOOLS: PAROCHIAL—PUBLIC—PRIVATE SCHOOLS OF
NEW NETHERLANDS³

ADAPTED FROM WILLIAM H. KILPATRICK

Of all colonies, those founded from commercial considerations show most nearly the identical transfer of the institutional life of the parent country. In no instance, probably, has this been truer than in the case of New Netherland. No alienating persecution had brought the Dutch to the American shores. There was no cause for its settlers to criticize even a single custom of the loved "fatherland." On the contrary, conscious pride in the deserved glory of the United Netherlands—then at the zenith of their prosperity—determined them to transplant the old life as little changed as possible.

Among the institutions carried thus to the New World, few, if any, had deeper roots in the life of the Dutch than church and school. Devotion to the principles of the reformed religion had been, in great degree, the secret of the long and stubborn opposition to Spanish oppression. That same devotion had been the greatest single force in creating the new commonwealth. As a most important means of fixing and preserving the reformed faith, the parochial school had become an indispensable part of the organization of the new church. Interwoven thus with the very life of the church was a school system in which the schoolmaster was an officer in the church, and the curriculum of the school included conscious preparation for participation in the service of the public worship.

This joint control, while differing in different times and places, seems on the whole to have been settled in such a way that in religious affairs the church had a determining voice, while in all other matters the secular authorities controlled. The division of influence would thus differ according to the kind of school. In the Latin schools of the city the church saw to it that the

³ *The Dutch Schools of New Netherlands and Colonial New York.* United States Bureau of Education Bulletin, 1912, No. 12.

masters signed the creed, that the catechism was taught, that no bad books were used, and that the pupils attended the regular Sunday church service. But even here the minister and consistory could only use moral suasion; the enforcement of the laws lay finally with the secular body.

The election and appointment of teachers varied greatly. The more important Latin schools were under the immediate control of the city burgomasters, and appointment seems to have been made directly by them without reference to the church, except that generally the requirement of creed subscription was enforced. The elementary schools might be so managed, but on the whole the church authorities had more voice in appointments to lower schools. The synods sought indeed to secure to the consistories the legal right of joint action with the magistracy on all appointments, but in this they were never entirely successful.

The remuneration of the teachers was partly by stipulated salary, partly by approved school fees, and oftentimes by sundry extras, as entrance (matriculation) fees, stipulated presents, and free lodging. The salaries of masters came sometimes from the town treasury, and sometimes from church funds which had (apparently) been sequestered from the church orders at the Reformation.

Letters of instruction were given by an ecclesiastical committee to schoolmasters upon their departure from the Netherlands to the New World. Such a letter follows:

June 7, 1636.

INSTRUCTIONS AND LETTER OF CREDENTIAL FOR SCHOOL-MASTERS GOING TO THE EAST INDIES OR ELSEWHERE.

"Whereas it is well understood by the Honorable Directors of the N. N. Company, that nothing is more important for the well-being of men, of whatever station, than that they should be taken care of from the very beginning, by keeping them under the eye and supervision of the schoolmaster, and in the exercises of the school, that they derive from such instruction the means necessary for their support, in all the stations and callings of life: and

"Inasmuch as, also, upon these exercises, both the glory of God and the salvation of men are not a little dependent; and such exercises are deemed expedient both for the welfare of their company, as well as for the individuals employed

therein; and also that their ships, besides the other officers, may also be provided with schoolmasters; and

"Inasmuch as the . . . by these, by the name of N. N. . . . has offered his services, in this capacity, to the committee on ecclesiastical affairs of the said company, and which committee is especially charged therewith by the Classis of Amsterdam; and the said classis having previously inquired as to this individual, and by examination have ascertained his fitness and experience for such a position; that on the report rendered by the said classis, and with the approbation and consent of the said Honorable Directors, he has been appointed schoolmaster, and sent in such capacity to N.....N..... with these specific instructions, to wit:

"He is to instruct the youth, both on shipboard and on land, in reading, writing, ciphering, and arithmetic, with all zeal and diligence; he is also to implant the fundamental principles of the true Christian Religion and salvation, by means of catechizing; he is to teach them the customary forms of prayers, and also to accustom them to pray; he is to give heed to their manners, and bring these as far as possible to modesty and propriety; and to this end, he is to maintain good discipline and order, and further to do all that is required of a good, diligent, and faithful schoolmaster.

"And inasmuch as N.....N..... is directed to conduct himself in this office according to these instructions, and he, on his part, has promised so to do, as well as to set a good example before youth and others: Therefore, these open letters, both credentials and instructions, are given him upon his sailing, to serve him as may be found necessary.

"Thus done in our classical assembly held in Amsterdam on . . ."

The part that the local church, through its consistory and church masters (kerke meesters), had in the control of the school under consideration seems to have been slight. As to the New Amsterdam church masters, exactly two references have been noted which connect them with the school. Both refer to the schoolhouse; so that we may conclude here that it was the duty of the church masters to see to the physical care of the church

property, including the schoolhouse, if such there were belonging to the church. As no schoolhouse was ever owned by the New Amsterdam church (i.e., during the Dutch days), and as after 1653 the schoolhouse was provided exclusively by the municipality, the connection of the church wardens with the school, which was apparently never very active, ceased entirely, so far as appears, some 10 years before the English occupation. It may be remarked that this connection of the church with the school through the church masters, was at all times more nominal than real, since the church masters were not chosen by the church, but by the civic authorities. No records appear prior to 1656, but after that time the burgomasters nominated a double number of church masters from whom the director general made a selection of the proper number satisfactory to himself. There need be no doubt that some such plan obtained throughout the Dutch period. Even during the first English period (1664-1673) the town council elected the church masters.

The elementary school of New Amsterdam was the joint concern of church and state. The church entered as a copartner in the school in the fact that, among the Dutch, it was the universally accepted duty of the schoolmaster to teach religion through the catechism and other church formularies. As theological divergence was the worst of all errors, and as the influence of the school was now recognized as transcendently great, it had become the peculiar duty of the church to safeguard the chair of instruction. Accordingly, the Classis of Amsterdam—in special cases, the local minister and consistory—examined the prospective New Amsterdam masters as to their fitness, especially for their religious duties. A like supervision, the church exercised—in theory at least—over the actual teaching of the school.

The civil authorities conceived their interests and responsibilities in a manner strikingly similar to what is common in America today. They chose the masters—frequently upon ecclesiastical recommendation—paid their salaries, furnished the schoolhouse, and gave the directions under which the masters taught. In the division of civic function, the States-General exercised only a broad oversight, serving more as a court of final appeal than as an executive or legislative agency. The Lords Directors from the general treasury of the company furnished the money for the salaries, directed the general affairs of the school, and besides held themselves free to control even its minutiae. The director

general and council acted only as the agents of the company, but exercised much power in the service of their lords. The city authorities, but for decaying finances and an autocratic director, would have furnished a sufficient support and the sale control of the city school. As it was, their financial support extended (apparently) only to furnishing the schoolhouse, while the control was always subject to Stuyvesant's "advice." In spite, however, of any thwarting of purpose, enough was done by the secular authorities to present a remarkable anticipation of the American public school.

The support and control of the New Amsterdam Latin school was much the same as of the New Amsterdam elementary school, the main difference being that no ecclesiastical body is mentioned so much as once in connection with the selection or certification of either Latin master. Another difference was that while the city seemed not to give the elementary master any stipend other than house rent, . . . the burgomasters furnished a good portion of the salary.

That the Dutch schools of America are properly called public seems unquestionable. They were open to all the children, were controlled by the duly constituted civil authorities, and were both housed and supported by the public moneys. It is true that direct tax levies for school support were not (as a rule) made, that tuition was regularly charged, and that the church had more or less voice in the management. There was, therefore, a failure in these results to reach the present conception of the American public schools; but neither one nor all of the defects can destroy their essential character as public schools.

The question as to the influence of these schools on the development of the American public education would for a satisfactory answer carry us far beyond the scope of this work. Rather has this study been planned to supply information regarding the Dutch in America that can be used by others in the investigation of such questions. The attitude of the English in colonial New York was not of a nature to utilize the Dutch interest in education, nor did the Dutch seem disposed to seek a basis of helpful coöperation. Public education in New York City accordingly did not flourish during the century of English control. But with the Dutch villages the case was far otherwise. Apparently in each was maintained a genuine public school. It seems, therefore, unthinkable that this deep interest in public education, which for over a century was extended through so much of the colony,

should have had no part in early committing New York to a strong policy of State public schools.

THE MASSACHUSETTS LAW OF 1647⁴

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the scriptures, as in former times by keeping them in an unknown tongue, so in these latter times by persuading from the use of tongues, that so at least the true sense and meaning of the original might be clouded by false glosses of saint-seeming deceivers, that learning may not be buried in the grave of our fathers in church and commonwealth, the Lord assisting our endeavors; it is therefore ordered that every township in this jurisdiction, after the Lord hath increased them to the number of fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided, those that send their children be not oppressed by paying much more than they can have them taught for in other towns; and it is further ordered, that where any town shall increase to the number of 100 families or householders they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university, provided that if any town neglect the performance hereof above one year, that every such town shall pay five pounds to the next school till they shall perform this order.

THE SIGNIFICANCE OF EARLY MASSACHUSETTS LEGISLATION⁵

BY GEORGE H. MARTIN

An analysis of early colonial educational legislation in Massachusetts reveals the following principles upon which the school history of that commonwealth rests:

1. The universal education of youth is essential to the well-being of the state.

⁴ Records of Massachusetts, Vol. II, p. 203.

⁵ *The Evolution of the Massachusetts Public School System*. D. Appleton and Company, 1894, pp. 14-15.

2. The obligation to furnish this education rests primarily upon the parent.
3. The state has a right to enforce this obligation.
4. The state may fix a standard which shall determine the kind of education, and the minimum amount.
5. Public money raised by general tax may be used to provide such education as the state requires. The tax may be general, though the school attendance is not.
6. Education higher than the rudiments may be supplied by the state. Opportunity must be provided at public expense for youths who wish it to be fitted for the university.

Although the Massachusetts Law of 1647 became a model for several other colonies, it did not absolve New England or even Massachusetts from educational difficulties. The experience of Massachusetts with this law was somewhat like that of England with the statute of laborers—the passage of the measure was comparatively simple but it had frequently to be reënacted and bolstered up by enacting clauses. Even with such attempts to make the law effective certain towns which came within the law remained without secondary schools. Various reasons for failing to maintain grammar schools were set forth: one town could find no teacher, another could find no building, still another opened a school but found that the school could not be maintained.

Notwithstanding these difficulties encountered in bringing knowledge to pioneer boys, the passage of this law possesses great significance.

A "Peoples' " secondary school in colonial days. The secondary schools of America have been twice impeached: once during the colonial period as a result of Benjamin Franklin's proposal that secondary education provide training for the prospective business man and man of affairs, and once early in the national period just before the first high school was organized. Franklin himself professed to have found so little of value in the classics and so much of value in subjects not commonly offered in Latin Grammar schools that he urged not only the

founding of a new kind of school, but also the organization of a more liberal program of studies. Although Franklin did not realize in the academy which he fathered, the kind of attainments suggested in his proposals, the academy movement did tend toward liberalized secondary education, just as it had already done in England.

In 1749 Benjamin Franklin wrote and published a pamphlet entitled, "Proposals Relative to the Education of Youth in Pennsylvania." Although this pamphlet expressed the personal views of Franklin, the generous support given to the proposals show that it expressed also the sentiment of many other citizens of Philadelphia. These proposals which embodied the plan drawn up by Franklin in 1743 bear a striking similarity to present-day "proposals" for the establishment of junior colleges.

FRANKLIN'S ACADEMY*

By J. P. WICKERSHAM

The pamphlet proposed that the house for the Academy should be located not far from a river, and have connected with it "a garden, orchard, meadow, and a field or two," and be furnished with "a library, maps of all countries, globes, some mathematical instruments, an apparatus for experiments in natural philosophy and mechanics, prints of all kinds, prospects, building and machines." The Rector among other qualifications was to be "a correct, pure speaker of the English tongue." In order to keep the pupils in health and to strengthen and render active their bodies, they were to be "frequently exercised in running, leaping, wrestling and swimming." The study of *drawing* was recommended with "some of the first principles of perspective." The *English* language was to be taught by grammar and reading some of the best authors; the style of the pupils was to be formed "by writing letters to each other, making abstracts of what they read, or writing the same things in their own words," and a good delivery acquired by "making declamations, repeating speeches, and delivering orations." *Reading* was to be made serviceable to useful knowledge by introducing the most valuable

* *A History of Education in Pennsylvania*. Pp. 58-60. Lancaster, Pa., 1886.

facts and observations concerning History, Chronology, Ancient Customs, Morality, Religion and Politics. Discussions, oral and written, were suggested as well calculated to "warm the imagination, whet the industry and strengthen the abilities" of the young. "Though all should not be compelled to learn *Latin, Greek*, or the modern foreign languages, yet none that have an ardent desire to learn them should be refused; their *English, Arithmetic, and other studies absolutely necessary*, not being neglected." "With the history of men, times and nations should be read, at proper hours or days, some of the best *histories of nature*, which would not only be delightful to youth, and furnish them with matter for their letters, as well as other history, but would afterwards be of great use to them, whether they are merchants, handicrafts, or divines; enabling the first better to understand many commodities and drugs, the second to improve their trade or handicraft by new mixtures of materials, and the last to adorn their discourses by beautiful comparisons, and strengthen them by new proofs of Divine Providence." And, "while the pupils are reading natural history, might not a little gardening, planting, grafting, and inoculating, be taught and practiced; and, now and then, excursions made to the neighboring plantations of the best farmers, their methods observed and reasoned upon for the information of youth, the improvement of agriculture being useful to all, and skill in it no disparagement to any?" The plan thus proposed, and especially that part of it which subordinated classical to English studies, met with great favor and generous support.

The result of the agitation thus begun, was the organization of a Board of Trustees to carry the design into effect. Of this Board, Franklin was chosen President. Vacancies in the Board were to be filled by the remaining members, and no member was allowed to receive either reward or compensation. The members of the Board raised among themselves £2000, and this sum was afterwards considerably increased by subscriptions among the citizens and in other ways. Application was made to the Common Council of the City of Philadelphia for aid; and the following, from a paper drawn up and presented to this body by Franklin, 1750, sets forth the broad and generous objects had in view:

"The greatest part of the money paid and to be paid is subscribed by the trustees themselves, and advanced by

them, many of whom have no children of their own to educate, but act with a view to the public good, without regard to sect or party. And they have engaged to open a Charity School within two years for the instruction of poor children, gratis, in reading, writing, and arithmetic, and the first principles of virtue and piety. The benefits expected from this institution are:

"1. That the youth of Pennsylvania may have an opportunity of receiving a good education at home, and be under no necessity of going abroad for it, whereby not only considerable expense may be saved to the country, but a stricter eye may be had over their morals by their friends and relations.

"2. That a number of our natives will hereby be qualified to bear magistracies, and execute other public offices of trust, with reputation to themselves and country, there being at present great want of persons so qualified in the several counties of this Province; and this is the more necessary now to be provided for by the English here, as vast numbers of foreigners are yearly imported among us, totally ignorant of our laws, customs and language.

"3. That a number of the poorer sort will hereby be qualified to act as schoolmasters in the country, to teach children reading, writing, arithmetic and the grammar of their mother tongue, and being of good morals and known character, may be recommended from the Academy to country schools for that purpose—the country suffering very much at present for want of good schoolmasters, and obliged frequently to employ in their schools vicious imported servants or concealed Papists, who by their bad examples and instructions often deprave the morals or corrupt the principles of the children under their care.

"4. It is thought that a good Academy erected here in Philadelphia, a healthy place, where provisions are plenty, situated in the centre of the Colonies, may draw numbers of students from the neighboring Provinces, who must spend considerable sums among us yearly in payment for their lodging, diet, apparel, etc., which will be an advantage to our traders, artisans and owners of houses and lands."

Extending the privilege of education by extending the academy. In 1751 the Philadelphia Academy was established in

accordance with the general tenor of the "proposals." The launching of this school was a very significant step in secondary education, because it marks the beginning of the successful career of a new and important institution for America.

The academies which were established during the later years of the eighteenth century as well as the original Franklin academy made a particularly strong bid for the patronage of the middle classes. Instead of going abroad for secondary education, boys might here receive training which was said by the friends of academies to be quite as good as the training given in England.

An examination of the "proposals" shows that the Franklin academy was designed to depart considerably from the contemporary requirements for college entrance—at least so far as variety of subjects offered was concerned. Although many of the academies became essentially college preparatory institutions, the curriculums of academies remained much broader than those of Latin grammar schools. The "great end and real business of living" was the objective of Exeter academy which was founded in 1778. According to the original constitution of this school, its objective was pursued by means of training in English, Latin, Greek, penmanship, mathematics, science, music, and other liberal courses as the trustees might direct. By the beginning of the nineteenth century this school offered the following subjects: Latin, Greek, French, English, rhetoric, logic, moral philosophy, arithmetic, geometry, physics, geography, astronomy, and natural law. By 1818 there was a division of the program of studies into two curriculums, the classical and the English. The English curriculum contained the following additions to the program of 1800: ancient and modern history, forensics, surveying, navigation, together with an amplification of the offerings in English composition. It is of especial importance to note that this expansion of the program of studies was made upon the initiative of academies and their patrons, and that these expanded programs greatly exceeded the demands of contemporary colleges. The additions were made partly as a result of demands of founders

and patrons and partly as a result of increased available subject matter, as in science. The broadening curriculum of the academies, the appeal to boys to receive their schooling in America, and the manner in which the teaching was conducted combined in such a way as to cause certain English friends of education some disquietude. One English writer candidly admitted that American scholarship was no longer what it had formerly been when the colonial boys were trained in Europe.

The boys in academies were somewhat older than those in the earlier Latin grammar schools. Their elementary training was more extensive. Owing to this greater maturity, extra-curricular activities of broader scope were attempted. Student organizations such as debating clubs were formed, occasional plays and exhibitions were presented, and athletic activities were increased.

In addition to expanding the program of studies, academies broadened the scope of purposes set up by earlier secondary schools. Many students who attended the academies remained as cadets or instructors for some time after completing their courses. Also, certain students pursued academy courses with the avowed purpose of becoming teachers. These conditions together with another which was of far greater significance than either of the two foregoing matters led many academies to assume a fairly definite position as normal training institutions.

The third direction assumed by the expanding academies was in the opening of their doors to girls. Up to the days of academies, girls had generally been regarded as unfit for higher education or else higher education as unfit for girls. At any rate, girls had been allowed to go no further than the doorsteps in attendance at Latin grammar schools, although the story is told that a Massachusetts girl in her eagerness for wisdom did proceed that far. Certain fortunate girls had received the benefits of private tutelage, but fear for national welfare, domestic tranquillity, and the strong probability that girls would fail in rigorous academic tasks even if they were admitted to the schools, not

only preserved boys' schools from co-educational arrangements but even deterred a society governed by males from providing separate schools for girls.

The secondary education of girls was promoted very slowly even after it was first proposed and begun. The "School of Misses" conducted by David McClure in 1773 was among the earliest schools which trained girls beyond the rudiments if indeed that school did so. In his diary for December 1, 1773, McClure wrote: ⁷

I opened the School consisting the first day of about 30 Misses. Afterwards they increased to 70 and 80; so that I was obliged to divide the day between them; & one half came in the forenoon, and the other in the Afternoon. They were from 7 to 20 years of age. Mr. Samuel Parker, afterwards settled in the ministry in Boston, was my predecessor in this school. I attended to them in reading, writing, arithmetic & geography principally. This is, I believe, the only female School, (supported by the town) in New England, it is a wise and useful institution.

At the close of the Revolution, the spirit of independence and equality had proceeded so far as to warrant the opening of academies for girls in New Haven and Philadelphia. In 1785, a co-educational academy was opened at Greenfield Hill. A few other schools for either girls only or for both boys and girls were opened before 1800. During the first quarter of the nineteenth century a solid basis was given for the girls' educational movement. Then it was that Mary Lyon, the founder of Mount Holyoke seminary, became fired with zeal for the education of girls. Then it was also that inspiration for the founding of two hundred seminaries for girls emanated directly from the famous Tory seminary. By 1837, America was definitely committed to the offering of training beyond the elementary school to girls and women. By that time female seminaries and higher institutions as Mount Holyoke and Oberlin were giving women substantially the same quality of training as that offered to

⁷ *Diary of David McClure*, p. 148.

men in the academies and colleges of the day. Co-education developed somewhat more tardily. It was prompted for two principal reasons: first, America was converted to the desirability¹ of educating girls, and, second, the need for economical administering of education required that boys and girls be trained together. The persistent cogency of both of these reasons has prevented and will prevent for years to come the serious consideration of separating the sexes in elementary, secondary, or collegiate institutions.

The early American high school. In spite of the advances made in the democratization of education by the academies, a spirit of unrest developed in certain centers about 1820. The following passages from the report of the Boston School Committee in 1821 indicate some of the reasons for establishing a new kind of secondary school and the character of the proposed school. Although the name proposed, English Classical School, was adopted, the new school soon acquired the name, English High School.⁸

“ . . . The mode of education now adopted, and the branches of knowledge that are taught at our English grammar schools, are not sufficiently extensive nor otherwise calculated to bring the powers of the mind into operation nor to qualify a youth to fill usefully and respectably many of those stations, both public and private, in which he may be placed. A parent who wishes to give a child an education that shall fit him for active life, and shall serve as a foundation for eminence in his profession, whether Mercantile or Mechanical, is under the necessity of giving him a different education from any which our public schools can now furnish. Hence, many children are separated from their parents and sent to private academies in this vicinity, to acquire that instruction which cannot be obtained at the public seminaries. Thus, many parents, who contribute largely to the support of these institutions, are subjected to heavy expense for the same object, in other towns.

“The Committee, for these and many other weighty considera-

⁸ Report of the Sub-Committee, quoted from E. E. Brown, *The Making of Our Middle Schools*. Longmans, Green and Company, 1902. Pp. 299-300.

tions that might be offered, and in order to render the present system of public education more nearly perfect, are of the opinion that an additional School is required. They therefore, recommend the founding of a seminary which shall be called the English Classical School, and submit the following as a general outline of a plan for its organization and of the course of studies to be pursued.

"1st. That the term of time for pursuing the course of studies proposed, be three years.

"2ndly. That the School be divided into three classes, and one year be assigned to the studies of each class.

"3rdly. That the age of admission be not less than twelve years.

"4thly. That the School be for Boys exclusively.

"5thly. That candidates for admission be proposed on a given day annually; but scholars with suitable qualifications may be admitted at any intermediate time to an advanced standing.

"6thly. That candidates for admission shall be subject to a strict examination, in such manner as the School Committee may direct, to ascertain their qualifications according to these rules.

"7thly. That it be required of every candidate, to qualify him for admission, that he be well acquainted with reading, writing, English grammar in all its branches, and arithmetic as far as simple proportion.

"8thly. That it be required of the Masters and Ushers, as a necessary qualification, that they shall have been regularly educated at some University.

The program of studies for the three years of this school was as follows:

First year—English, arithmetic, and geography. (English included reading, literature, composition, and declamation.)

Second year—English, mathematics, history, and logic. (English included the same branches as in the first year; mathematics included algebra, geometry, trigonometry and applied mathematics, as navigation and surveying; history included ancient and modern history and chronology.)

Third year—English, mathematics, history, natural science, and philosophy. (English, mathematics, and history included the

same as for the preceding year; philosophy included logic and moral and political philosophy.)

In May, 1821, a secondary school was opened in accordance with the foregoing plans. This school was not at first called a *high school*, although that name was applied to it in the records of the school committee in 1824. A high school for girls was opened in Boston in January 1826. Likewise, in New York a "High School for Boys" was opened in 1825 and a "Female High-School" in 1826. Other cities of Massachusetts, as Worcester, Plymouth, and Salem, established high schools soon after Boston opened the first high school. As these schools were established upon the initiative of individual cities, this development was satisfactory for towns and cities which took the necessary steps for founding such schools, but for other localities general legislation was needed. Such legislation was provided in 1827.

The beginning of state legislation for high schools. The Massachusetts law of 1827 placed the high school upon a statutory basis. Although the mandatory character of this law was not followed immediately in the legislation of other states, a precedent for such laws was hereby established.

Be it enacted by the Senate and House of Representatives in General Court assembled and by the authority of the same. That each town or district within this Commonwealth, containing fifty families, or householders, shall be provided with a teacher or teachers, of good morals, to instruct children in orthography, reading, writing, English grammar, geography, arithmetic, and good behavior, for such term of time as shall be equivalent to six months for one school in each year; and every town or district containing one hundred families or householders, shall be provided with such teacher or teachers, for such term of time as shall be equivalent to eighteen months, for one school in each year. And every city, town, or district, containing five hundred families, or householders, shall be provided with such teacher or teachers for such term of time as shall be equivalent to twenty-four months, for one school in each year, and shall also be provided with a master of good morals, competent to instruct, in addition to the branches of learning aforesaid, the history of the

United States, bookkeeping by single entry, geometry, surveying, algebra; and shall employ such master to instruct a school, in such city, town, or district, for the benefit of all the inhabitants thereof, at least ten months in each year, exclusive of vacations, in such convenient place, or alternately at such places in such city, town, or district, as the said inhabitants, at their meetings in March, or April, annually, shall determine; and in every city, or town, containing four thousand inhabitants, such master shall be competent in addition to all the foregoing branches, to instruct the Latin and Greek languages, history, rhetoric, and logic.

The struggle for public secondary schools. The opening of a few high schools was not readily accepted as leading toward a solution of the problems of secondary education. Academies had become firmly established by 1830, and their traditions had taken deep root in the minds of many leaders. For more than a generation a severe battle raged between academies and high schools. On the side of the academies were their early start, independent financial support, traditions, and independence of demagogues. On the side of the high schools were public financial support, academic appeal to the masses of citizens, popular control, and responsiveness to the desires of citizens in general. The following quotations entitled, *Early High-School Propaganda*, *The Battle Between Academies and High Schools*—the excerpt from the Reverend Gulliver's address, *The Relative Merits of Public High-Schools and Endowed Academies*, and *The High-School System* indicate the seriousness of the conflict between the two types of secondary schools.

Early high-school propaganda. The following statement of the nature, object, and probable results of a public high school was first addressed to the citizens of Hartford, Connecticut, in 1838. During the next four years it was repeated in public addresses in all cities of the state. In 1846, under the title, *Considerations Respecting a High School*,⁹ it was reprinted as a tract to promote the establishment of a high school in Hartford.

⁹ *Barnard's American Journal of Education*, XXII, 379-385. 1871.

The testimonials regarding high schools in other cities add weight to the argument in the main statement.

By a Public or Common High School, is intended a public or common school for the older and more advanced scholars of the community in which the same is located, in a course of instruction adapted to their age, and intellectual and moral wants, and, to some extent, to their future pursuits in life. It is common or public in the same sense in which the district school, or any lower grade of school established and supported under a general law and for the public benefit, is common or public. It is open to all the children of the community to which the school belongs, under such regulations as to age, attainments, etc., as the good of the institution may require, or the community may adopt. A Public High School is not necessarily a free school. It may be supported by a fund, a public tax, or an assessment or rate of tuition per scholar, or by a combination of all, or any two of these modes. Much less is it a public or common school in the sense of being cheap, inferior, ordinary. To be truly a public school, a High School must embrace in its course of instruction studies which can be more profitably pursued there than in public schools of a lower grade, or which gather their pupils from a more circumscribed territory, and as profitably as in any private schools of the same pretensions. It must make a good education common in the highest and best sense of the word common—common because it is good enough for the best, and cheap enough for the poorest family in the community. It would be a mockery of the idea of such a school, to call it a Public High School, if the course of instruction pursued in it is not higher and better than can be got in public schools of a lower grade, or if it does not meet the wants of the wealthiest and best educated families, or, if the course of instruction is liberal and thorough, and at the same time the worthy and talented child of a poor family is shut out from its privileges by a high rate of tuition. The school, to be common practically, must be both cheap and good. To be cheap, its support must be provided for wholly or mainly out of a fund, or by public tax. And to justify the imposition of a public tax, the advantages of such a school must accrue to the whole community. It must be shown to be a common benefit, a common interest, which cannot be secured so well, or at all, except through the medium of taxation. What, then, are the advantages which may reasonably be anticipated from the establish-

ment of a Public High School, properly organized, instructed, and supervised?

First. Every thing which is now done in the several district schools, and schools of lower grade, can be better done, and in a shorter time, because the teachers will be relieved from the necessity of devoting the time and attention now required by few of the older and more advanced pupils, and can bestow all their time and attention upon the preparatory studies and younger children. These studies will be taught in methods suited to the age and attainments of the pupils. A right beginning can thus be made in the lower schools, in giving a thorough practical knowledge of elementary principles, and in the formation of correct mental and moral habits, which are indispensable to all sound education. All this will be done under the additional stimulus of being early and thoroughly fitted for the High School.

Second. A High School will give completeness to the system of public instruction which may be in operation. It will make suitable provision for the older and more advanced pupils of both sexes, and will admit of the methods of instruction and discipline which cannot be profitably introduced into the schools below. The lower grade of schools—those which are established for young children—require a large use of oral and simultaneous methods, and a frequent change of place and position on the part of the pupils. The higher branches, especially all mathematical subjects, require patient application and habits of abstraction on the part of the older pupils, which can with difficulty, if at all, be attained by many pupils amid a multiplicity of distracting exercises, movements, and sounds. The recitations of this class of pupils, to be profitable and satisfactory, must be conducted in a manner which requires time, discussion, and explanation, and the undivided attention both of pupils and teacher. The course of instruction provided in the High School will be equal in extent and value to that which may be given in any private school, academy, or female seminary in the place, and which is now virtually denied to the great mass of the children by the burdensome charge of tuition.

Third. It will equalize the opportunities of a good education, and exert a happy, social influence throughout the whole community from which it gathers its scholars. From the want of a public school of this character, the children of such families as rely exclusively on the district school are isolated, and are condemned to an inferior education, both in quality and quantity;

they are cut off from the stimulus and sympathy which the mingling of children of the same age from different parts of the same community would impart. The benefits, direct and indirect, which will result to the country districts, or poor families who live in the outskirts of the city, from the establishment of a school of this class, cannot easily be overestimated. The number of young men and young women who will receive a thorough education, qualifying them for business, and to be teachers, will increase from year to year; and the number who will press up to the front ranks of scholarship in the school, bearing away the palm of excellence by the vigor of sound minds in sound bodies, of minds and bodies made vigorous by long walks and muscular labor in the open air, will be greater in proportion to their number than from the city districts. It will do both classes good, the children of the city, and the children of the country districts, to measure themselves intellectually in the same fields of study, and to subject the peculiarities of their respective manners, the roughness and awkwardness sometimes characteristic of the one, and the artificiality and flippancy of the other, to the harmonizing influence of reciprocal action and reaction. The isolation and estrangement which now divide and subdivide the community into country and city clans, which, if not hostile, are strangers to each other, will give place to the frequent intercourse and esteem of individual and family friendship, commenced in the school-room, and on the play-ground of the school. The school will thus become a bond of union, a channel of sympathy, a spring-head of healthy influence, and stimulus to the whole community.

Fourth. The privileges of a good school will be brought within the reach of all classes of the community, and will actually be enjoyed by children of the same age from families of the most diverse circumstances as to wealth, education, and occupation. Side by side in the same recitations, heart and hand in the same sports, pressing up together to the same high attainments in knowledge and character, will be found the children of the rich and poor, the more and the less favored in outward circumstances, without knowing or caring to know how far their families are separated by the arbitrary distinctions which divide and distract society. With nearly equal opportunities of education in childhood and youth, the prizes of life, its best fields of usefulness, and sources of happiness will be open to all, whatever may have been their accidents of birth and fortune. From many obscure

and humble homes in the city and in the country, will be called forth and trained inventive talent, productive skill, intellectual taste, and God-like benevolence, which will add to the general wealth, multiply workshops, increase the value of farms, and carry forward every moral and religious enterprise which aims to bless, purify, and elevate society.

Fifth. The influence which the annual or semi-annual examination of candidates for admission into the High School has, will operate as a powerful and abiding stimulus to exertion throughout all the lower schools. The privileges of the High School will be held forth as the reward of exertion in the lower grade of schools; and promotion to it, based on the result of an impartial examination, will form an unobjectional standard by which the relative standing of the different schools can be ascertained, and will also indicate the studies and departments of education to which the teachers in particular schools should devote special attention. This influence upon the lower schools, upon scholars and teachers, upon those who reach, and those who do not reach the High School, will be worth more than all it costs, independent of the advantages received by its pupils.

Sixth. While the expenses of public or common schools will necessarily be increased by the establishment of a school of this class, in addition to those already supported, the aggregate expenditures for education, including public and private schools, will be diminished. Private schools of the same relative standing will be discontinued for want of patronage, while those of a higher grade, if really called for by the educational wants of the community, will be improved. A healthy competition will necessarily exist between the public and private schools of the highest grade, and the school or schools which do not come up to the highest mark, must go down in public estimation. Other things being equal, viz., school-houses, teachers, classification, and the means and appliances of instruction, the public school is always better than the private. From the uniform experience of those places where a High School has been established, it may be safely stated, that there will be an annual saving in the expenses of education to any community, equal to one half the amount paid for tuition in private schools, and, with this saving of expense, there will be a better state of education.

Seventh. The successful establishment of a High School, by improving the whole system of common schools, and interesting a larger number of families in the prosperity of the schools, will

create a better public sentiment on the subject than has heretofore existed, and the schools will be regarded as the common property, the common glory, the common security of the whole community. The wealthy will feel that the small additional tax required to establish and sustain this school, if not saved to them in the diminished tuition for the education of their own children in private schools, at home and abroad, is returned to them a hundred fold in the enterprise which it will quicken, in the increased value given to property, and in the number of families which will resort to the place where it is located, as a desirable residence, because of the facilities employed for a good education. The poor will feel that, whatever may betide them, their children are born to an inheritance more valuable than lands or shops, in the free access to institutions where as good an education can be had as money can buy at home or abroad. The stranger will be invited to visit not only the institutions which public or individual benevolence has provided for the poor, the orphan, the deaf mute, and the criminal, but schools where the children and youth of the community are trained to inventive and creative habits of mind, to a practical knowledge of the fundamental principles of business, to sound moral habits, refined tastes, and respectful manners. And in what balance, it has well been asked in reference to the cost of good public schools, as compared with these advantages, shall we weigh the value of cultivated, intelligent, energetic, polished, and virtuous citizens? How much would a community be justified in paying for a physician who should discover or practice some mode of treatment through which many lives should be preserved? How much for a judge, who, in the able administration of the laws, should secure many fortunes, or rights more precious than fortunes, that might else be lost? How much for a minister of religion who should be the instrument of saving hundreds from vice and crime, and persuading them to the exertion of their best powers for the common good? How much for the ingenious inventor, who, proceeding from the first principles of science onward, should produce some improvement that should enlarge all the comforts of society, not to say a steam-engine or a magnetic telegraph? How much for the patriotic statesman, who, in difficult times, becomes the savior of his country? How much for the well-instructed and enterprising merchant who should suggest and commence the branches of business that should bring in a vast accession of wealth and strength? One such person as

any of these might repay what a High School would cost for centuries. Whether, in the course of centuries, every High School would produce one such person, it would be useless to prophesy. But it is certain that it would produce many intelligent citizens, intelligent men of business, intelligent servants of the state, intelligent teachers, intelligent wives and daughters, who, in their several spheres, would repay to any community much more than they and all their associates had received. The very taxes of a town, in twenty years, will be lessened by the existence of a school which will continually have sent forth those who were so educated as to become not burdens but benefactors.

These results have been realized wherever a Public High School has been opened under circumstances favorable to the success of a private school of the same grade—wherever a good school-house, good regulations, (for admission, attendance, studies, and books,) good teachers, and good supervision have been provided.

The Principal of the Latin High School of Boston, in a letter written 1846, says—

“There is no institution so truly republican as such a school as this. While we, the present teachers, were under-graduates of the school, the rich sent their sons to the school because it was the best that could be found. They ascertained that it was not a source of contamination, but that their boys learned here to compare themselves with others, and to feel the necessity of something more than mere *wealth* to gain consideration. At that time, poor men sent their sons hither because they knew that they here would get that education which they could afford to give them in no other way. They gained too by intercourse with their wealthier mates a polish of exterior manners, and an intellectual turn of mind which their friends could appreciate and perceive, although they could not tell what it was that had been acquired. Oftentimes also the poor boy would take the lead of his more pampered classmate, and take the honors of the school.

“In a class lately belonging to the school were two boys, one the son of a man of extreme wealth, whose property cannot be less than \$500,000; and the other the son of an Irish laborer employed by the city at a dollar a day to sweep the streets. The latter boy was the better scholar.”

The Principal of the English High School in a letter writes—

“The school under my charge is principally composed of what are called the middling classes of our city. At present, about one third of my pupils are sons of merchants; the remaining two thirds are sons of professional men, mechanics and laborers. A few years ago, he who ranked, the last year of his course, as our third scholar, was the son of a lamplighter, and worked three nights per week, during his whole course, to save his father the expense of books, &c., while at school. This year my second (if not the first), scholar, is a cooper’s son. We have several sons of clergymen of distinction and lawyers of eminence. Indeed, the school is a perfect example of the poor and the rich, meeting on common ground and on terms quite democratic.”

The Principal of the High School for girls in Newburyport, writes—

“The Female High School was established by the town of Newburyport nearly three years since, under great opposition. It was the desire of its principal advocates to make it such a school, in respect to the course of instruction, and facilities for acquiring knowledge, and laying the foundation for usefulness, as should so successfully compete with our best private schools, as to supersede their necessity.

“A few days after we were organized, a gentleman came into the schoolroom to make some inquiries respecting the classes of society most fully represented amongst us. I was totally unable to give him the desired information, and judging from the appearance of the individuals of my charge, I could form no idea as to who were the children of poor parents, or of those in better circumstances. I mentioned the names of the parents of several, which I had just taken, and, amongst others, of two young ladies of seventeen or eighteen years of age, who, at that moment, it being recess, were walking down the room, with their arms closely entwined about each other’s necks. ‘The first of the two,’ said the gentleman, ‘is a daughter of one of our first merchants, the other has a father worse than none, who obtains a livelihood from one of the lowest and most questionable occupations, and is himself most degraded.’ These two young ladies were classmates for more than two years, and very nearly equal in scholarship. The friendship they have formed, I am confident no circumstances of station in life can ever impair.

"We have had in our number many from the best families, in all respects, in the place. They sit side by side, they recite, and they associate most freely with those of the humblest parentage, whose widowed mothers, perhaps, toil day after day, at a wash-tub, without fear of contamination, or, as I honestly believe, a thought of the differences which exist. I have, at present, both extremes under my charge—the child of affluence and the child of low parentage and deep poverty. As my arrangements of pupils in divisions, &c. are, most of them, alphabetical, it often happens that the two extremes are brought together. This never causes a murmur, or look of dislike."

THE BATTLE BETWEEN ACADEMIES AND HIGH SCHOOLS¹⁰

The struggle in America between high schools and academies is exemplified in the annals of Norwich, Connecticut. The endowment of a FREE ACADEMY in the town of Norwich, Connecticut, by a few large-hearted men, as part of the system of public instruction, is a remarkable example of liberality to the cause of education and science, which we take pleasure in recording. The building erected for the accommodation of the school, the range of studies contemplated, the permanence and liberality of the endowment, and the history of the educational movement which ended in the present organization of the schools of Norwich, are matters of such general interest, that we have asked the privilege of publishing the Address of the Rev. J. P. Gulliver, with the other proceedings, at the recent inauguration of the institution. As an appropriate introduction, and summary of the whole movement we copy the following article from the Appendix to the Annual Report of the Superintendent of Common Schools in Connecticut for 1856.

Movements were commenced about twenty years since, for a re-organization of the public schools of the Second School Society of Norwich. The usual opposition originated by a few narrow-minded tax-payers, and fanned into life by ambitious demagogues, was arrayed against the measure, and it was finally defeated. The whole community had, however, been agitated with the subject, and much good seed had been sown, which has since borne beautiful fruit. For ten years the citizens of Norwich made the best they could of a set of disjointed schools, thrown together with scarcely any attempt at gradation, governed by six inde-

¹⁰ *Barnard's American Journal of Education*, II, 665-670. 1856.

pendent districts, and some forty school officers, and supported entirely without taxation. Good men labored hard; but almost in vain, to secure for the people, under the existing system, good schools.

An effort was then made, with still greater earnestness, to improve the schools, without any attempt at re-organization. They were regularly visited. A monthly meeting of the visitors was held, at which the condition of each school was minutely reported. Every possible effort was made to elevate the schools. The success was, however, but partial. After a trial of two years, the gentlemen, whose valuable time had been given to the effort, came unanimously to the conclusion, that without a consolidation of at least the more central school districts, and the thorough grading of the schools, and the taxation of property for the support of schools, this labor would be thrown away. The board, accordingly laid before the school society a proposition for inaugurating such a change. This was the signal for a storm! A few (but only a few) of the heavy tax-payers were the first to smell treason. They passed the word to a set of men, who flourish in their own esteem, by exhibiting their powers to thwarting what others attempt to do. The usual cry was raised, "a school for the rich." The prejudices of poor men were appealed to. This very class, who were to be most benefited by the change, were excited to oppose it. Men who had been paying rate bills for years, clamored against the proposition to support schools by taxing property. Parents, who had bitterly complained that their children could not be as well educated as those of the wealthy, refused to accept a plan which was to bring the highest order of schools within their reach, at a mere nominal expense. The intelligent portion of the community were, however, thoroughly aroused. Meeting after meeting was held. Crowds attended and listened to the discussions. Light was rapidly diffused. The opposition became desperate. All manner of offensive personalities were made use of to intimidate those who were inclined to be champions of the good cause. Still, it was apparent, by incidental votes, that a large and an increasing majority were in favor of the proposed change. This majority, however, forbore to press the question to a decisive vote. They publicly avowed their intention to postpone final action, until the whole community should have fully examined the question, and arrived at an intelligent decision upon it. This concession was taken advantage of. At an adjourned meeting,

where it was generally understood no decisive action was to take place, the opposition collected a large force, very many of whom were not legal voters, and, in the absence of the great body of the 'friends of the measure, voted the indefinite postponement of the whole subject. No sooner had this been accomplished, than a general regret was expressed at the result, even among those who had boisterously aided in the movement. Many declared that had they expected to succeed, they would not have opposed the measure. Their leaders, instead of receiving the coveted meed of applause from their followers, for the victory, were overwhelmed with reproaches. In these circumstances, the friends of reform judged it wise to cease all further agitation of the subject, and to leave the responsibility of the consequences upon those who had chosen to assume it. The administration of the schools was accordingly left in their hands. They appointed such officers as they chose, and no attempt was made in any form, for two years, to interfere with their wishes. During this time, the schools sunk to a lower level than ever. Even the most ignorant and prejudiced, could not fail to see and feel the evil. The attendance constantly diminished, until it was ascertained that only about one-third of the children, between the ages of four and sixteen, attended school at all. The feeling of the community on the subject was becoming intense. The attention of the people having been so thoroughly aroused by previous discussion, every defect was seen in a focal light. Those who had been distinguished as the leaders in the effort to defeat the proposed reforms, found themselves in a most uncomfortable position. They were daily reproached as the authors of all the mischief. The first fruit of this ripened public sentiment, was a movement for the endowment of a free high school. Every attempt to improve the lower schools, had been met by the cry, "You want a high school! You want a school for the rich, and mean to tax the poor to pay for it!" Some thirty-five individuals accordingly determined that they would unite and establish a high school and endow it, which should be open, free of all charge, to all classes. This effort was successful, some eighty-five thousand dollars having been subscribed for that purpose. It was generally understood that as soon as this subscription was complete, a new appeal was to be made to the school society to acknowledge this magnificent donation, by re-organizing their lower schools on the plan previously rejected. Before this plan could be carried out, it was ascertained that the leaders in the former opposition were moving

in the same direction, and were about to propose the same thing! Most gladly the friends of reform left the business in their hands. The result was, that a consolidation of the two central districts of the city was effected, a vote was passed, *unanimously*, to purchase one of the most valuable lots in the city, and to erect the noble structure. Soon after, the provisions of the new school law were accepted, a Board of Education was appointed, the ablest teachers were engaged at liberal salaries, a perfect gradation of schools established, and every provision made for the institution of the very best system of public education. When the Free Academy shall go into operation, Norwich will undoubtedly be furnished with public schools, equal, if not superior, to those of any city in the land, not excepting Boston and its neighboring municipalities. This history shows what can be accomplished, in the face of the most powerful opposition, by determination, patience and perseverance. It especially shows that defeat is often essential to victory. The feeling excited, and the interest awakened by these repeated defeats, have secured these glorious ends. It should be added, that the citizens of Norwich are justly proud of their schools, and that the expenditure they occasion is most cheerfully borne, without the slightest show of opposition.

As an important part of the history of this movement, we publish a Circular, addressed to a few of the wealthiest citizens of Norwich, which, seconded by the unwearied personal efforts of the author, the Rev. J. P. Gulliver, originated and gave direction to the efforts which ended in the establishment and endowment of the Free Academy. After setting forth the condition of the schools and of education in Norwich, the author remarks:

Such are some of the leading *facts* in the case. The inquiry now arises—*In what way may these evils be most readily removed?*

Will you allow me to suggest, very briefly, some considerations which go to show that the establishment of a HIGH SCHOOL, on an independent basis and on a liberal scale, will more directly and surely effect the object in view than any other measure we can adopt.

Such a school is of course necessary to secure instruction in the higher branches of study, for which we have almost no provision now.

It is necessary to introduce system and gradation into the lower schools. There must be a standard to grade by—a unit

to measure with. The qualifications required for entering the High School will furnish such a standard. Those who control the High School can raise the standard as rapidly as the improvement in the lower schools will allow. Thus gradually and almost insensibly all the schools in the city will be elevated.

This inciting influence will be felt also by parents, committees, and districts. No district will be willing to be deprived of the privileges of the High School on account of the inferiority of its own schools. The reputation of grammar school teachers will depend on the number of scholars they get into the High School. This will raise the standard in the grammar school. The reputation of the Primary school teachers will depend on their success in qualifying their scholars for the improved grammar school. The committees in charge of each school will sympathize with the teachers and pupils. The parents will soon become interested. No district will wish to be left behind in the honorable competition. A new life will thus be infused into all our schools. A new standard will gradually be adopted in all our districts. Interest and activity will take the place of apathy and indifference.

This seems to my own mind the readiest and surest way of reforming our whole school system. By means of a High School we can lead where we could never force. We can gently allure those upon whom our arguments and remonstrances will have no effect.

A board of enlightened men in charge of a High School could in fact, without seeming to do so, control the schools of the whole city. Gradually, but surely we should see them elevated in their character, enlarged in their accommodations, deepening in interest, and extending on every side their benign and elevating influences.

The next inquiry that claims our consideration is—*How shall a Free High School be established and sustained?*

There are but two ways:—

1. It may be established and controlled by the School Society.
2. It may be endowed by private munificence and managed by a board of Trustees selected by the founders.

The first is the ordinary method, and is in a good measure successful under the Massachusetts and Rhode Island laws, which authorize town and city governments to establish and control the schools, without recourse to a popular vote. But under the Connecticut law there are many difficulties.

1. There is always great difficulty in getting a vote for the *establishment* of such institutions. There are in every community

many, whose passions and prejudice can be easily aroused on such a subject. They are suspicious of those whom they term the aristocracy. They fear that some cunning plan is on foot to trample upon the people. They think that in some way they are to be deprived of their hard earnings for the benefit of the rich. No one can have forgotten the scenes through which we have passed in this city in discussing this subject. It would be difficult to tempt our citizens to engage in such a contest again. And even if they should, success would be very doubtful. What a noble vindication would the course now proposed furnish, of the disinterestedness and magnanimity of their motives in previous efforts!

2. To give to the mass of our voters any proper conception of the high character of such a school as we need, and to secure suitable *appropriations* for it, may safely be set down as an impossibility. We need a school that shall give to young ladies the best possible education in *every department*—an education that shall fit them for any station in life. We need a school that shall train our young men in classical, mathematical, and scientific study, so that they be fitted for college or any department of business life. We ought to remove the necessity of sending our children out of town in order to obtain an education. But who will undertake to make the men, that assemble in our Town Hall, comprehend or appreciate a plan like this?

3. The *management* of the school must be, on this plan, in the hands of the School Society.

What an opportunity would this furnish for the designing to ply their arts!

What an opportunity for every passionate man whose feelings may have been disturbed by the administration of wholesome law, to work fatal injury to such a school! How many friends of rejected applicants for admission would yearly be added to the discontented mass!

Besides, how little do large numbers of the voters in this city, or any other, know about the proper management of a High School? They have never attended one; they have never seen one in practical operation. Most of these men know more about a Bank, or an Insurance Company, or a Manufacturing Company, than about a High School. But how much would the stock of such a company be worth if its concerns were left under the control of such an assembly as is collected in one of our School meetings?

The great danger would be that an institution, of the high order which we contemplate, would be so stinted in its commencement, or so mismanaged afterward as to prove a failure.

The other method of establishing the school is by private endowment. The plan would be to raise a sufficient sum to purchase land, to erect the building and to establish a fund sufficient to keep the building in repair, purchase fuel, &c.; and also to raise a fund, the income of which shall be sufficient to secure the services of as able and accomplished a corps of teachers as the country affords.

The advantages of this plan would be as follows:

1. It would secure for the city through all time, a school of the highest character. No private school or "boarding school," however expensive, could possibly give to our sons or daughters, advantages equal to those offered by an institution thus established and controlled. This proceeds on the supposition that it shall be liberally endowed. Tens of thousands have often been almost thrown away in the half-endowment of institutions which have never, on that account, secured any important results.

2. It would secure also a complete system of Grammar, Intermediate and Primary schools of a high order. This I trust has already been shown, and it appears to be one of the grandest results of the enterprise.

3. It would place not only the High School, but all our schools under the actual control of a board of enlightened men, who in their responsible position would make the science of education a study, and thus direct the whole system on the best principles.

4. It would secure for our children, at their home, an education of the highest order. If only a small portion of the money which has been spent by our citizens for twenty years past, or which must be spent for twenty years to come, for inferior advantages in distant schools, were devoted to the endowment of this school, an ample sum would at once be secured. The plan we are now pursuing is the most uneconomical, as well as the most unsatisfactory, possible.

5. It will secure our children, more effectually than any other plan, from contact with children of vulgar manners and vicious habits. This will seem to many a singular assertion in respect to a public free school. Yet this is the teaching of experience. Daniel Webster was in the habit of declaring very emphatically

his preference of well regulated public schools in this respect to any private schools. The Principal of the High School in Worcester, after calling my attention to the remarkably gentlemanly and lady-like manners of the scholars, during the time of recess, remarked: "We find that the thorough education required of those who enter this school is the best guarantee of refinement of manners and delicacy of feeling." I listened to a recitation in Virgil from two boys, one a son of one of the most distinguished men in Massachusetts, and the other the son of an Irish laborer in his employment. It was impossible to discover any difference in dress or demeanor, only that the Irish boy seemed rather the better scholar of the two. Vice and vulgarity are confined to no class in society. But education is always refining and purifying in its tendency. In a private school the vicious and the vulgar often can not be dealt with as they deserve. But an institution like this would be so independent and so strong, that it could expel at once any injurious character, before he could infect his fellows.

6. This plan if carried out, will doubtless contribute greatly to the growth and prosperity of our city.

I have letters from prominent gentlemen both in Hartford and Providence, stating it to be the general opinion of intelligent men, that the recent impulse given to business in those places and the great rise in real estate "is to be dated from," says one, is "mainly to be ascribed to," says another, "the establishment of an improved system of schools." And this is the uniform testimony which comes from these cities. It is well known that a large number have left our city, and many have been deterred from coming here, on account of our defective system of schools. What enterprise could be more beneficent and at the same time more remunerative than the one now proposed? "There is that scattereth and yet increaseth, there is that withholdeth more than is meet, but it *tendeth to poverty*."

7. We have the testimony of experience in favor of this plan of private endowment.

The Putnam Free School of Newburyport, Mass., was endowed by Oliver Putnam, Esq., of Newbury. The building and land cost \$26,000. The fund for the support of teachers is \$50,000. The object of the founder was to raise the standard, especially of Common School Education. I am informed that the effect has been truly wonderful.

The plan then, which is now proposed, is the establishment,

by private endowment, of a Classical and English Free Academy of the highest order. (Here follows the plan since realized.)

The plan now presented is designed to secure all the educational facilities which are needed to meet the wants of this entire community *for all time*. It is designed to reach and benefit every class in society. It is designed to elevate and perfect schools of every grade. It is designed to accomplish by associated effort, what individuals can secure for themselves and their children, only by great pains-taking and expenditure. It proceeds on the principle that the true wealth of a nation is the cultivated talent of its citizens. It will seek out genius, whenever it is to be found, and will educate it for the common weal. If there be any here, in any of the walks of life, who are fitted to become the future Fultons, and Whitneys, and Websters, and Washingtons of our land—it will awaken and develop their dormant power. Franklin owed all he was, and his country owed all he did for her, to the public schools of Boston. There may be Franklins here, and even those greater than he. Is not a plan for comprehensive work more truly economical, than one half as costly, but fitted to secure only a tithe of its benefits? In asking you to lend an aid to this enterprise, commensurate with the interests involved, the inducement can be decidedly held out that you will do a permanent work, a thorough work, a patriotic work, an economical work, a work which will be pecuniarily remunerative in its influence upon the prosperity of the city, a work for your children and for your children's children, a work for all the generations that are to succeed each other upon this soil, a work for which each of these generations shall successively bless you, a work upon which God shall smile, and which will be a source of the purest satisfaction to your own mind through all your remaining years on earth.

ADDRESS BY THE REVEREND JOHN P. GULLIVER AT THE
DEDICATION OF THE NORWICH FREE ACADEMY¹¹

This was the soil into which the seed was cast from which grew the grand enterprise whose successful beginning we celebrate today. In the midst of the struggle, a gentleman, since a large donor to the institution, declared more in jest than in earnest, "These men talk about a High School! I would not take one for a gift if it is to be managed by such assemblages as we have

¹¹ Barnard's *American Journal of Education*, II, 683-685. 1856. Abridged.

lately had at the Town Hall. I am in favor of an endowed school and would give \$5,000 towards one." This chance remark suggested the idea of this Institution, and led to a series of inquiries and investigations which were continued for two years. The first question was, Are public high schools, supported by taxation, in all respects successful? the second, Would endowed free schools remedy their defects? the third, On what plan should endowed schools be conducted in order to insure success? On these points either by correspondence or by personal interview, a large number of the leading educators of the country were consulted. It was ascertained that in all quarters apprehension was beginning to be felt in regard to the working of our higher public schools. The lower schools up to the grade of the grammar school were well sustained. Men were to be found in all our communities who had been themselves educated up to that point, and understood practically the importance of such schools, in sufficient numbers to control popular sentiment, and secure for them ample appropriations and a steady support. But the studies of the High School,—Algebra, Geometry, Chemistry, Natural Philosophy, Ancient History, Latin, Greek, French and German, were a perfect "terra incognita" to the great mass of the people. While the High School was a new thing and while a few enlightened citizens had the control of it, in numerous instances it was carried to a high state of perfection. But after a time the burden of taxation would begin to be felt. Men would discuss the high salaries paid to the accomplished teachers which such schools demand, and would ask, "To what purpose is this waste?" Demagogues, keen-scented as wolves, would snuff the prey. "What do we want of a High School to teach rich men's children?" they would shout. "It is a shame to tax the poor to pay a man \$1,800 a year for teaching children to make xs and pothooks and gabble *parlez-vous*." The work would go bravely on; and on election day, amid great excitement, a new school committee would be chosen in favor of retrenchment and popular rights. In a single day the fruit of years of labor would be destroyed. Such occurrences it was ascertained, had already become sufficiently numerous to excite serious alarm among the most intelligent friends of education. Even in communities where the High School had been uniformly prosperous, it appeared that the same influences were at work and awakened constant apprehension. The proposal to establish an endowed High School was regarded by all the gentlemen consulted with great favor, and a uniform

opinion was expressed that, properly managed, it would supply all the defects in the public High School.

THE RELATIVE MERITS OF PUBLIC HIGH SCHOOLS AND ENDOWED ACADEMIES¹²

BY GEORGE S. BOUTWELL

The distinguishing difference between the advocates of endowed schools and of free schools is this: those who advocate the system of endowed academies go back in their arguments to one foundation, which is, that in education of the higher grades the great mass of the people are not to be trusted. And those who advocate a system of free education in high schools put the matter where we have put the rights of property and liberty, where we put the institutions of law and religion—upon the public judgment. And we will stand there. If the public will not maintain institutions of learning, then, I say, let institutions of learning go down. If I belong to a state which cannot be moved from its extremities to its centre, and from its centre to its extremities, for the maintenance of a system of public instruction, then, in that respect, I disown that state; and if there be one state in this Union whose people cannot be aroused to maintain a system of public instruction, then they are false to the great leading idea of American principles, and of civil, political, and religious liberty.

It is easy to enumerate the advantages of a system of public education, and the evils—I say evils—of endowed academies, whether free or charging payment for tuition. Endowed academies are not, in all respects, under all circumstances, and everywhere, to be condemned. In discussing this subject, it may be well for me to state the view that I have of the proper position of endowed academies. They have a place in the educational wants of this age. This is especially true of academies of the highest rank, which furnish an elevated and extended course of instruction. To such I make no objection, but I would honor and encourage them. Yet I regard private schools, which do the work usually done in public schools, as temporary, their necessity as ephemeral, and I think that under a proper public sentiment they will soon pass away. They cannot stand,—such has been the experience in Massachusetts,—they cannot stand by the side of

¹² *Thoughts on Educational Topics and Institutions*. Phillips, Sampson and Company, 1859. Pp. 152-163.

a good system of public education. Yet where the population is sparse, where there is not property sufficient to enable the people to establish a high school, then an endowed school may properly come in to make up the deficiency, to supply the means of education to which the public wealth, at the present moment, is unequal. Endowed institutions very properly, also, give a professional education to the people. At this moment we cannot look to the public to give that education which is purely professional. But what we do look to the public for is this: to furnish the means of education to the children of the whole people, without any reference to social, pecuniary, political, or religious distinctions, so that every person may have a preliminary education sufficient for the ordinary business of life.

It is said that the means of education are better in an endowed academy, or in an endowed free school, than they can be in a public school. What is meant by *means* of education? I understand that, first and chiefly, as extraneous means of education, we must look to a correct public sentiment, which shall animate and influence the teacher, which shall give direction to the school, which shall furnish the necessary public funds. An endowed free academy can have none of these things permanently. Take, for example, the free school established at Norwich by the liberality of thirty or forty gentlemen, who contributed ninety thousand dollars. What security is there that fifty years hence, when the educational wants of the people shall be changed, when the population of Norwich shall be double or treble what it is now, when science shall make greater demands, when these forty contributors shall have passed away, this institution will answer the wants of that generation? According to what we know of the history of this country, it will be entirely inadequate; and, though none of us may live to see the prediction fulfilled or falsified, I do not hesitate to say that the school will ultimately prove a failure, because it is founded on a mistake.

Then look and see what would have been the state of things if there had been public spirit invoked to establish a public high school, and if the means for its support had been raised by taxation of all the people, so that the system of education would have expanded according to the growth of the city, and year by year would have accommodated itself to the public wants and public zeal in the cause. Though these means seem now to be ample, they will by and by be found too limited. The school at Norwich is encumbered with regulations; and so every en-

dowed institution is likely to be, because the right of a man to appropriate his property to a particular object carries with it, in the principles of common law, and in the administration of the law, in all free governments, the right to declare, to a certain extent, how that property shall be applied. Rules have been established—very proper and judicious rules for today. But who knows that a hundred years hence they will be proper or acceptable at all? They have also established a board of trustees, ultimately to be reduced to twenty-five. These trustees have power to perpetuate themselves. Who does not see that you have severed this institution from the public sentiment of the city of Norwich, and that ultimately that city will seek for itself what it needs; and that, a hundred years hence, it will not consent to live, in the civilization of that time, under the regulations which forty men have now established, however wise the regulations may at the present moment be?

One hundred and fifty years ago, Thomas Hollis, of London, made a bequest to the university at Cambridge, with a provision that on every Thursday a professor should sit in his chair to answer questions in polemic theology. All well enough then; but the public sentiment of to-day will not carry it out.

So it may be with the school at Norwich a hundred years hence. The man or state that sacrifices the living public judgment to the opinion of a dead man, or a dead generation, makes a great mistake. We should never substitute, beyond the power of revisal, the opinion of a past generation for the opinion of a living generation. I trust to the living men of to-day as to what is necessary to meet our existing wants, rather than to the wisest men who lived in Greece or Rome. And, if I would not trust the wise men of Greece and Rome, I do not know why the people, a hundred years hence, should trust the wise men of our own time.

The duty of the public is to provide means for the education of all. To do that, we need the political, social, and moral power of all, to sustain teachers and institutions of learning; and endowed or free schools, depending upon the contributions of individuals, can never, in a free country, be raised to the character of a system. If you rob the public schools of the influence of our public-spirited men, if they take away a portion of their pupils from them, our system is impaired. It must stand as a whole, educating the entire people, and looking to all for support, or it cannot be permanently maintained.

THE HIGH-SCHOOL SYSTEM¹³

BY GEORGE S. BOUTWELL

How can the advantages of a high-school education be best secured? This question I propose to consider. First, the high school must be a public school. A *public school* I understand to be a school established by the public,—supported chiefly or entirely by the public, controlled by the public, and accessible to the public upon terms of equality, without special charge for tuition.

Private schools may be established and controlled by an individual, or by an association of individuals, who have no corporate rights under the government, but receive pupils upon terms agreed upon, subject to the ordinary laws of the land.

Private schools may be founded also by one or more persons, and by them endowed with funds, for their partial or entire support. In such cases, the founder, through the money given, has the right to prescribe the rules by which the school shall be controlled, and also to provide for the appointment of its managers or trustees through all time. In such cases, corporate powers are usually granted by the government for the management of the business. But the chief rights of such an institution are derived from the founder, and the facilities for their easy exercise and quiet enjoyment are derived from the state.

Such schools are sometimes, upon a superficial view, supposed to be public, because they receive pupils upon terms of equality, and no rule of exclusion exists which does not apply to all. These institutions are public in their use, but not in their foundation or control, and are therefore not public schools. The character of a school, as of any eleemosynary institution, is derived from the will of the founder; and when the beneficial founder is an individual, or a number of individuals less than the whole political organization of which the individuals are a part, the institution is private, whatever the rules for its enjoyment may be. To say that a school is a public school because it receives pupils free of charge for tuition, or because it receives them upon conditions that are applied alike to all, is to deny that there are any private schools, for all come within the definition thus laid down.

I shall proceed to compare, with what brevity I can command,

¹³ *Thoughts on Educational Topics and Institutions*. Phillips, Sampson and Company, 1859. Pp. 188-195. Abridged.

the public high school with the free high school or academy upon a private foundation. My reasoning is general, and the argument does not apply to all the circumstances of society. It is not everywhere possible to establish a public high school. In some cases the population may not be sufficient, in others there may not be adequate wealth, and in others there may not be an elevated public sentiment equal to the emergency. In such circumstances, those who desire education must obtain it in the best manner possible; and academies, whether free or not, and private schools, whether endowed or not, should be thankfully accepted and encouraged. Nor will high schools meet all the wants of society. There must always be a place for classical schools, scientific schools, professional schools, which, in their respective courses of study, either anticipate or follow, in the career of the student, his four years of college life. With these conditions and limitations stated, the point I seek to establish is that a public high school can do the work usually done in such institutions more faithfully, thoroughly, and economically, than it can be done anywhere else.

1st. The supervision of the public school is more responsible, and consequently more perfect. In private schools, academies and free high schools which are endowed, there is a board of trustees, who perpetuate, as a corporation, their own existence. Each member is elected for life, and he is not only not responsible to the public, but he is not even responsible, except in extraordinary cases, to his associates. Responsibility is, in all governments, the security taken for fidelity. The election of representatives, in the state or national legislature, for life, would be esteemed a great and dangerous innovation.

It may be said that boards of trustees are usually better qualified to manage a school than the committees elected by the respective cities and towns. Judged as individuals, this is probably true; though upon this point I prefer to admit a claim rather than to express an opinion. But positively incompetent school committees are the exception in Massachusetts; usually the people make the selection from their best men. But in the public school you get the immediate, direct supervision of the public. Not merely in the election of committees, but in a daily interest and vigilance whose results are freely disclosed to the superintending committee, as every inhabitant feels that his contribution, as a tax-payer, gives him the right to judge the character of the school, and makes it his duty to report its defects

to those charged with its management. The real defects of a school, especially of a high school, will be first discovered by pupils; and they are likely to report these defects to their parents. In the case of the endowed private school, the parent feels that he buys whatever the trustees have to sell, or takes as a gift whatever they have to offer free; and he does not, logically nor as a matter of fact, infer from either of these relations his right to participate in the government of the school. In one case you have the observation, the judgment, the supervision, of the whole community; in the other case you have the learning and judgment of five, seven, ten, or twelve men.

2dly. The faithfulness of the teacher is very much dependent upon the supervision to which he is subject. This is only saying that the teacher is human. In the public school there is no motive which can influence a reasonable man that would lead him to swerve in the least from his fidelity to the interest of the school as a whole. No partiality to a particular individual, no desire to promulgate a special idea, can ever stand in the place of that public support which is best secured by a just performance of his duties. In the private school, with a self-perpetuating board of trustees, the temptation is strong to make the organization subservient to some opinion in politics, religion, or social life. This may not always be done, but in many cases it has been done, and there is no reason to expect different things in the future.

Opposition to tax support for high schools. As a result of the cogency of the arguments for high schools and the hold which high schools gained upon their patrons, the battle between these types of secondary schools was fairly settled by 1860. By that time, it is now conceded, the high schools had gained a slight ascendancy which has become greater with each succeeding decade.

Difficulties arose, however, from time to time in the obtaining of tax funds for secondary school purposes. An early example of this difficulty is that of Hartford, Connecticut.

OPPOSITION TO TAX SUPPORT FOR HIGH SCHOOLS¹⁴

The agitation in Hartford, from 1839 to 1842, of the subject of a graded system of public schools, either by the union of the three City Districts, as provided for in the Act of 1839, and the

¹⁴ Barnard's *American Journal of Education*, XXII, 386. 1871.

Revised School Law of 1841, or by a School of a higher grade than the District Schools for the more advanced pupils of the First School Society, as was provided for in the Act of 1798, modified in the Act of 1839 and stood in the first section of the Act concerning Schools in 1841, was unfortunate in its immediate influence on the general movement, and contributed to the repeal not only of the sections by which High Schools could be made part of the system of Society or District schools, but to the overthrow of the Board of Commissioners of Education. The same arch demagogue (John M. Niles), who dragged even the suggestion in 1838, which did not become part of the law, of paying for the services of School Visitors, always onerous, if faithfully performed, on a class of men the least able to bear it, into the party discussions of that year, and who attacked every year any State supervision of this great public interest, took a conspicuous part in opposing the union of the City Districts in 1841-2; and in circulating a petition to the Legislature, drafted by himself, for a repeal not only of all the sections relating to a school which should teach any thing beyond reading, writing, arithmetic, English grammar, and geography, but provided for an intelligent local administration as well as general legislation by a system of society and State reports on the actual condition of the schools. To this Petition he obtained the names of many persons, who habitually oppose every proposition of local improvement which involves taxation, of several political friends, who declared afterwards they did not know that they had signed any paper of this purport, and of a few excellent men, some of whom lived long enough to vote for the establishment of a Society High School, and enjoy the advantages of it in the education of their own children and grandchildren, and to thank the writer of this History for the part he took in the petition for its establishment.

PETITION

*To the Honorable General Assembly of the State of Connecticut,
now in Session at New Haven:—*

The memorial of the subscribers respectfully represents that, in their opinion, some evils exist in the present law entitled "An Act concerning Common Schools," which require the interference of your honorable body.

1. The power given to divert a part of the School Fund Dividends to sustain High Schools to be established by School Societies or Union Districts, we think ought not to exist. The School Fund ought to be strictly confined to primary district schools, which are for the common benefit of all.

2. Districts should not, in our opinion, have the power to cast the whole expense of common schools upon the grand list, but the common school should be supported as formerly, and the High School by those for whose benefit it is established; and all taxes ought, as we believe, to be laid as formerly, on the polls and ratable estates of the inhabitants of School Districts. The present mode, compelling a separate list for each District to be prepared every year, is attended with much trouble and expense, with little or no benefit.

3. We doubt the utility of paying School Visitors for their services. We query whether the services will be as faithfully rendered as when gratuitously done, and we cannot but think that competent men can be found who will willingly make this little sacrifice to the cause of popular education.

We therefore respectfully point out the last clause of the 8th, the 9th, the 22nd to 27th inclusive, and the 38th and 39th sections of the present law as requiring repeal or revision, and therefore pray your Honors to devote to the foregoing suggestions such action as you in your wisdom shall deem necessary, and we as in duty bound, etc.

(Signed by 100 citizens.)

The Kalamazoo high school case. The Case of Charles E. Stuart *et al. vs.* School District No. 1 of the village of Kalamazoo. As secondary education developed in the several states the right of taxation for the support of higher schools was challenged. Such a difficulty had arisen in several other states as exemplified by the foregoing passage. In 1874, the supreme court of Michigan settled the issue in the Kalamazoo case and thereby established a precedent for other states. The essential features of the

decision are included in the following passages from the opinion handed down by the court:

The bill in this case is filed to restrain the collection of such portion of the school taxes assessed against complainants for the year 1872, as have been voted for the support of the high school in that village, and for the payment of the salary of the superintendent. While, nominally, this is the end sought to be attained by the bill, the real purpose of the bill is wider and vastly more comprehensive than this brief statement would indicate, inasmuch as it seeks a judicial determination of the right of school authorities, in what are called union school districts of the state, to levy taxes upon the general public for the support of what in this state are known as high schools, and to make free by such taxation the instruction of children in other languages than the English. The bill is, consequently, of no small interest to all the people of the state; and to a large number of very flourishing schools, it is of the very highest interest, as their prosperity and usefulness, in a large degree, depend upon the method in which they are supported, so that a blow at this method seems a blow at the schools themselves.

The more general question which the record presents we shall endeavor to state in our own language, but so as to make it stand out distinctly as a naked question of law, disconnected from all considerations of policy or expediency, in which light alone we are at liberty to consider it. It is, as we understand it, that there is no authority in this state to make the high schools free by taxation levied on the people at large. The argument is that while there may be no constitutional provision expressly prohibiting such taxation, the general course of legislation in the state and the general understanding of the people have been such as to require us to regard the instruction in the classics and in the living modern languages in these schools as in the nature not of practical and therefore necessary instruction for the benefit of the people at large, but rather as accomplishments for the few, to be sought after in the main by those best able to pay for them, and to be paid for by those who seek them, and not by general tax. And not only has this been the general state policy, but this higher learning of itself, when supplied by the state, is so far a matter of private concern to those who receive it that the courts ought to declare it incompetent to supply it wholly at the public

expense. This is in substance, as we understand it, the position of the complainants in this suit.

When this doctrine was broached to us, we must confess to no little surprise that the legislation and policy of our state were appealed to against the right of the state to furnish a liberal education to the youth of the state in schools brought within the reach of all classes. We supposed it had always been understood in this state that education, not merely in the rudiments, but in an enlarged sense, was regarded as an important practical advantage to be supplied at their option to rich and poor alike, and not as something pertaining merely to culture and accomplishment to be brought as such within the reach of those whose accumulated wealth enabled them to pay for it. As this, however, is now so seriously disputed, it may be necessary, perhaps, to take a brief survey of the legislation and general course, not only of the state, but of the antecedent territory, on the subject.

In reviewing the educational history of Michigan, the court cites the provision for the English or colonial type of grammar school in the early laws of Michigan:

It must suffice to say that the [Michigan] law of 1827, which provided for grammar schools as a grade of common schools, was adopted from laws which from a very early period had been in existence in Massachusetts, and which in like manner, under heavy penalties, compelled the support of these grammar schools in every considerable town.

The system adopted by the legislature, and which embraced a university and branches, and a common primary school in every school district of the state, was put into successful operation, and so continued, with one exception, until the adoption of the constitution of 1850. The exception relates to the branches of the university, which the funds of the university did not warrant keeping up, and which were consequently abandoned. Private schools to some extent took their place; but when the convention met to frame a constitution in 1850, there were already in existence, in a number of the leading towns, schools belonging to the general public system, which were furnishing instruction which fitted young men for the university. These schools for the most part had been organized under special laws, which, while leaving the primary school laws in general applicable, gave the districts a larger board of officers and larger powers of taxation for build-

ings and the payment of teachers. As the establishment and support of such schools were optional with the people, they encountered in some localities considerable opposition, which, however, is believed to have been always overcome, and the authority of the districts to provide instruction in the languages in these union schools was not, so far as we are aware, seriously contested. The superintendent of public instruction devotes a considerable portion of his annual report for 1848 to these schools, and in that of 1849 he says: "This class of institutions, which may be made to constitute a connecting link between the ordinary common school and the state university, is fast gaining upon the confidence of the public. Those already established have generally surpassed the expectations of their founders. Some of them have already attained a standing rarely equaled by the academical institutions of the older states. Large, commodious, and beautiful edifices have been erected in quite a number of villages for the accommodation of these schools. These school-houses frequently occupy the most eligible sites in the village where they are located. I am happy in being able to state in this connection that the late capitol of our state, having been fitted up at much expense, was, in June last, opened as a *common school-house*; and that in that house is maintained a free school which constitutes the pride and ornament of the city of the straits." The *common* free school was a union school equivalent in its instruction to the ordinary high school in most matters, and the report furnishes very clear evidence that the superintendent believed schools of that grade to be entirely competent under the primary school law.

It now becomes important to see whether the constitutional convention and the people, in 1850, did any thing to undo what previously had been accomplished towards furnishing high schools as a part of the primary school system. The convention certainly did nothing to that end. On the contrary, they demonstrated in the most unmistakable manner that they cherished no such desire or purpose. The article on education as originally reported, while providing for free schools to be kept in each district at least three months in every year, added that "the English language and no other shall be taught in such schools." Attention was called to this provision, and it was amended so as to read that instruction should be "conducted in the English language." The reason for the change was fully given, that as it was reported it might be understood to prohibit the teaching of other languages than the English in the primary schools, a result that was not

desired. Judge Whipple stated in the convention that, in the section from which he came, French and German were taught, and "it is a most valuable improvement of the common school system." The late superintendent Pierce said that in some schools Latin was taught, and that he himself had taught Latin in a common school. He would not adopt any provision by which any knowledge would be excluded. "All that we ought to do is this: we should say the legislature shall establish primary schools." This, in his opinion, would give full power, and the details could be left to legislation.

The instrument submitted by the convention to the people and adopted by them provided for the establishment of free schools in every school district for at least three months in each year, and for the university. By the aid of these we have every reason to believe the people expected a complete collegiate education might be obtained. . . . The inference seems irresistible that the people expected the tendency towards the establishment of high schools in the primary-school districts would continue until every locality capable of supporting one was supplied. And this inference is strengthened by the fact that a considerable number of our union schools date their establishment from the year 1850 and the two or three years following.

If these facts do not demonstrate clearly and conclusively a general state policy, beginning in 1817 and continuing until after the adoption of the present constitution, in the direction of free schools in which education, and at their option the elements of classical education, might be brought within the reach of all the children of the state, then, as it seems to us, nothing can demonstrate it. We might follow the subject further and show that the subsequent legislation has all concurred with this policy, but it would be a waste of time and labor. We content ourselves with the statement that neither in our state policy, in our constitution, or in our laws, do we find the primary school districts restricted in the branches of knowledge which their officers may cause to be taught, or the grade of instruction that may be given, if their voters consent in regular form to bear the expense and raise the taxes for the purpose. (Justice Thomas M. Cooley. 30 Michigan 69.)

The modern high school. During recent years several agencies whose purposes are to establish closer relations between sec-

ondary schools and institutions of higher learning have arisen. Such an agency is the North Central Association, whose avowed aims are:

First to bring about a better acquaintance, a keener sympathy and a heartier co-operation between the colleges and secondary schools of this territory; second, to consider common educational problems and to devise the best ways and means of solving them; and third, to promote the physical, intellectual and moral well being of students by urging proper sanitary conditions of school buildings, adequate library and laboratory facilities, and higher standards of scholarship and remuneration of teachers.

The 1924 standards of the North Central Association are representative of what is expected of good high schools at the present time.¹⁵

A. BUILDINGS

Standard 1. The location and construction of the buildings, the lighting, heating and ventilation of the rooms, the nature of the lavatories, corridors, closets, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both pupils and teachers.

B. LIBRARY AND LABORATORIES

Standard 2. The library and laboratory facilities must be adequate to meet the needs of instruction in all courses offered. The library should be classified and catalogued, and an annual inventory should be made of laboratory and shop equipment.

C. RECORDS

Standard 3. Accurate and complete records of attendance and scholarship must be kept in such form as to be conveniently used and safely preserved.

D. REQUIREMENTS FOR GRADUATION

Standard 4. No school shall be accredited which does not require fifteen units for graduation. The school year shall consist of a minimum of thirty-six weeks. The minimum length of

¹⁵ Proceedings of the North Central Association, XXIX, Part I, 33-35.

a recitation period shall be forty minutes, exclusive of all time used in changing of classes or teachers.

A unit course of study in a secondary school is defined as a course covering an academic year that shall include in the aggregate not less than the equivalent of one hundred twenty sixty-minute hours of classroom work—two hours of shop or laboratory work being equivalent to one hour of prepared classroom work.

E. INSTRUCTION AND SPIRIT

Standard 5. The efficiency of instruction, the acquired habits of thought and study, the general intellectual and moral tone of a school are paramount factors, and therefore only schools that rank well in these particulars, as evidenced by rigid, thorough-going, sympathetic inspection, shall be considered eligible for the list.

F. SALARIES

Standard 6. No school shall hereafter be accredited whose salary schedule is not sufficient to command and retain teachers whose qualifications are such as required by this Association. The interpretation of this requirement shall be a matter of special responsibility for the state committee.

G. PREPARATION OF TEACHERS

Standard 7. All schools accredited by the Association shall maintain the following standards respecting teachers:

(a) The minimum attainments of a teacher of any academic subject, and of the supervisors of teachers of such subjects, shall be equivalent to graduation from a college belonging to the North Central Association of Colleges and Secondary Schools. Such requirements shall not be construed as retroactive while the teacher remains in the same city high school system.

It is recommended that as far as possible, teachers be assigned according to their major subjects in collegiate preparation.

(b) The minimum professional training of a teacher of any academic subject, and the supervisors of teachers of such subjects, shall be eleven semester hours in education. After September 1, 1925, this requirement shall be fifteen semester hours in education. This additional requirement shall not be construed as retroactive.

The Association recommends the following types of courses as meeting the spirit of this standard: Educational psychology, principles of secondary education, theory of teaching, special methods in subject taught, observation and practice of teaching, history of education, educational sociology, and school administration and supervision.

H. THE TEACHING LOAD

Standard 8. Factors conditioning the efficiency of instruction are: (1) The pupil-teacher ratio, as shown by the average daily attendance; (2) the number of classes taught by the teachers; (3) the number of student hours per teacher; (4) the number of students in a class. The Association recommends the following as norms: (1) Pupil-teacher ratio, 25; (2) the number of classes taught by the teacher, 5 daily; (3) the number of student hours per teacher, 150 per day; (4) the number of students in a class, 25.

An average attendance in excess of 30 pupils per teacher, or more than one hundred sixty pupil hours per teacher per day, or more than six periods per day for any teacher shall be considered as a violation of this standard.

For interpreting this standard in connection with laboratory work in science, and in connection with study room supervision, a double period may be counted as the equivalent of one classroom exercise for teachers of academic subjects, provided that no combination of such work amounting to more than thirty-five periods a week be required of any teacher.

I. THE PUPIL LOAD

Standard 9. Four unit courses or the equivalent as defined in Standard 4 shall be considered the normal amount of work to be carried for credit by the average or medium students. Only those students who have made passing grades in each subject studied during the preceding term, and who rank in the upper 25% of their classes, may be allowed to take more than four units for credit.

J. THE PROGRAM OF STUDIES

Standard 10. The Association recommends that every accredited school offer units of work in mathematics, social sciences, languages (including English), natural science, the fine arts,

and physical training. It further recommends the introduction of vocational subjects such as agriculture, manual training, household economics, and commercial subjects into schools where local conditions render such introduction feasible. The Association will hold that a sufficient number of qualified teachers must be provided to care adequately for all instruction offered. Not less than the equivalent of the full teaching time of three teachers may be given to academic subjects.

Principles derived from discussions of the development of American secondary education. A close relation exists between the dominant social tendencies of any period and the educational ideals and practices of the period. The operation of this principle has fostered moderate conservatism rather than either radical or reactionary tendencies. It is important to bear in mind that schools are dominated by many tendencies rather than by a single tendency.

Six fundamental principles of secondary education grew out of the early educational legislation in Massachusetts:

1. The universal education of youth is essential to the well-being of the state.
2. The obligation to furnish this education rests primarily upon the parent.
3. The state has a right to enforce this obligation.
4. The state may fix a standard which shall determine the kind of education, and the minimum amount.
5. Public money raised by general tax may be used to provide such education as the state requires. The tax may be general, though the school attendance is not.
6. Education higher than the rudiments may be supplied by the state. Opportunity must be provided at public expense for youths who wish it to be fitted for the university.

In response to the changing needs of the times, secondary schools require to be reorganized from time to time.

Failure of an educational institution to meet educational needs

will lead to its impeachment. In times past, however, a tendency to provide for past needs has often been as strong as to provide for present and future needs. The launching of the academy was an expression of revolt against the tendency of even public schools to remain narrow and to become stereotyped.

Educational practice sometimes lags far behind the best educational thought of a period.

The extension of the privilege of secondary education has advanced sufficiently to require no more discussion of the desirability of secondary education for girls or for all social classes.

The high-school movement represents an attempt to extend the privilege of education.

The high school proceeds upon the principle that the true wealth of a nation is the cultivated talent of its citizens.

Legislation is an aid in the development of secondary education.

Vested interests, traditions, and early start are effective in educational development much as they are in commercial and industrial development.

The issues of public financial support, popular academic appeal, popular control, and responsiveness to popular demands place high schools in ascendancy over private secondary schools.

The status of secondary education is directly proportional to its dependence upon public support and control.

The popularization of an educational institution can be aided by national appeals to the public. Public institutions for secondary education must be safe-guarded by rational leaders against demagogues who would discredit if not overthrow such institutions.

Although privately controlled secondary education may have certain definite functions to perform, public secondary education is the more widely diffused and seeks out talent or genius wherever it is to be found.

The general responsibility for public secondary education should be placed "where we have put the rights of property and

liberty, where we have put the institutions of law and liberty—upon the public judgment.”

Secondary education has passed from private to public control, support, and patronage. State policies, constitutions, and laws give officers of school districts the right to provide high schools “if their voters consent in regular form to bear the expense and raise taxes for the purpose.”

A modern high school is one which is adequate in at least the ten following respects:

Buildings

Library and laboratories

Records

Requirements for graduation

Instruction and spirit

Salaries

Preparation of teachers

Teaching load

Pupil load

Program of studies

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Evaluate colonial secondary education by showing that it was or was not well adapted to colonial needs.

2. Education is sometimes said to reflect social conditions. To what extent has secondary education in America reflected the social conditions of different times or places?

3. What were the points of strength and of weakness of the different colonial educational systems described in this chapter? Which of these conditions have continued to the present day?

4. State the leading points of the Massachusetts Law of 1647.

5. Compare the arguments advanced by Franklin for his academy with those advanced today for the junior college.

6. In what ways did the early academies aid in the popularization of secondary education?

7. In view of the fact that the academic work of girls is often superior to that of boys, how do you account for the long postponement of secondary education for girls?

8. Compare Franklin's proposals of 1743 with the report of the Boston School Committee in 1821.

9. What new policy in secondary education was provided by the Law of 1827?
10. What advantages had academies over high schools from 1821 to 1860?
11. Trace the development of the program of studies of secondary schools from colonial times to 1860.
12. Prepare in parallel columns the arguments of advocates of academies and high schools, respectively.
13. What was the Kalamazoo decision of 1874? Account for its significance.
14. Compare in at least three ways the modern high school with the colonial Latin grammar school.
15. What characteristics must a high school possess in order to justify its being called a people's high school?
16. Judge any secondary school with which you are familiar by the North Central Association standards.
17. Find evidence in support of the principles stated at the end of this chapter.

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CHAPTER III

THE PLACE OF SECONDARY EDUCATION IN AMERICA

American secondary schools as social laboratories. The present generation has witnessed an attempt to carry out a definite purpose in respect to secondary education in a somewhat indefinite manner. School officers and school patrons have united in an attempt to develop a national policy in secondary education and at the same time to adapt high schools to individual localities. This attempt has probably been more pronounced in large, cosmopolitan schools than in very small schools, because a large school is likely to meet a variety of needs by its diversified program, while a small school is likely to offer only a narrow range of curricula and thereby fail to satisfy the needs of even a small community. Many large schools have formulated curricula which are especially designed for particular localities.

This chapter is mainly a report upon laboratory practice. Certain social experiments are being conducted in our secondary schools. The accounts of first-hand observers of these experiments should facilitate an evaluation of the practices which are the subject of experimentation. Such accounts rather than theoretical discussions have been incorporated into this chapter for two reasons: first, there is not at present a satisfactory account of the social phenomena of the modern high school, and second, it is necessary in discussing social problems to have concrete instances as a background.

In addition to attempts to adjust curricula in individual communities, much has been said and in some places much has been done to adapt the school life to the community. Such adaptation, while local in its emphasis, is national in its benefits,

because much of the training which is planned for a given community has application in other localities, and because secondary school graduates are portable and are likely to migrate to distant parts of the country. That is, there have been attempts to make the school a community center to which both patrons and pupils of the school may come for various types of social gatherings; no better training than this could be devised for certain aspects of national life. Not all such uses of the school for social gatherings are new. Earlier generations were familiar with the use of schools for religious and political gatherings and for occasional festivals. Leaders have more recently advocated the use of schools for less formal and more frequent gatherings—gatherings in which members of the community assume leading parts as in meetings for general discussions or gatherings to which all members of the community may come for entertainment, parties, and dances.

The attention which is now devoted to athletics has also been conducive to wider use of the school plant. The school gymnasium thus becomes a center of interest throughout the winter months, when basketball for boys and girls becomes a leading feature of community entertainment for patrons of school. A school which possesses a tank adds to its features numerous swimming "events." This utilization of the school building leads to a centralization of interest in an educational institution. Such concentration of interest is in contrast with the scattering of interest still represented in communities which allow their citizens to provide for all their amusements by private ventures. If such increase of interest can be associated with the improved physical welfare of high-school students, there is believed to be an immense gain.

Similar general results are obtained when school buildings are used for school plays and musicales. The provision of an auditorium in a school building has other far-reaching influences than simply the economizing of pupils' money, when a school play is produced. Such provision encourages informal productions many

of which are merely interesting practice performances. Opportunities to engage freely in these performances form one type of training for later leadership either in the community or elsewhere.

A complaint which has often been made against the high school is that it trains for leadership in other communities than those in which the pupils attend school. In this way the high school, it has been alleged, becomes a trainer for other communities and at the same time, an aid in the depletion of its own community. By planning appropriate curricular and extra-curricular activities, high school officers have provided counter-acting agencies. This policy has caused a crowding out of many time-honored activities and the introduction of others which are probably as yet less well organized than they should be.

Americans now find themselves with modern high schools which have been planned by persons who have taken seriously the continued advocacy of the "school for the community" policy. They find foreign language classes with only a handful of pupils, and commercial courses with a crowd. They find in many places biology displaced by agriculture and general science. They find certain extra-curricular activities freely participated in by pupils many of whose parents looked askance upon participation in these activities in any place. With so many changes as have recently taken place, the American finds his school traditions broken on every hand. He is often led to wonder whether all idols needed to be destroyed in order to accomplish results which sometimes appear to be meager.

The readings included in this chapter are drawn from standard educational sources and constitute representative reports upon America's progress toward the solution of typical national and community problems.

Training for national and community leadership in secondary schools. Experiments in which the training of leaders is attempted are described in this section.

TRAINING GIRLS FOR LEADERSHIP¹

BY JESSIE E. GIBSON

In any large group the few become leaders by virtue of personality or circumstances, and the many remain more or less submerged, dissatisfied perhaps, but assuredly inert, and the valuable training in citizenship to be gained through proper participation in activities is lost. When the Girls' League was organized (in Spokane) in the spring of 1918, there were but few girls in the school who had the initiative and the poise necessary for leadership. The girls generally distrusted themselves and were afraid to employ their own talents; most of them were shy and awkward in presiding over large or small groups, in leading movements of any sort in the school, and in accepting civic responsibilities. Their viewpoint, too, was extremely personal, and they lacked the ability to work together and to lose sight of self in solving problems of the whole group. To correct this, and with the idea, too, of better co-ordinating the girls' activities in the school, the Girls' League was organized with its purpose expressed as follows: "(a) to provide a medium through which the group of girls, as a unit, may learn to work for the common good, either as leaders or intelligent followers; (b) to crystallize the best opinion and highest standards of the girls of the school into definitely acknowledged standards for all; (c) to provide better co-ordination of necessary girls' activities; (d) through departments and committees to give each girl an opportunity for the development of initiative, responsibility, and originality."

The concrete accomplishments of the league in its four years of existence would make an imposing array and would alone perhaps justify it, but its real purpose is always the proper guidance of that enthusiasm and energy, that independence, and that wish to act for herself which make the modern girl a decided problem. In order that as many girls as possible may have an opportunity to develop their own ability and to gain civic and social experience, no girl is permitted to hold more than one office, and we usually have between 130 and 140 girls in various positions of responsibility. Girl officers preside over all league meetings, even when our entire membership of over 1,200 gathers to hear a speaker, sometimes a person of national prominence. Questions which concern the welfare of the girls, such as the care of the lavatories or the use of the locker rooms, are turned

¹ *The School Review*, XXX, 613-620. October, 1922. Abridged.

over to the proper committees for settlement. If an overdressed and overpainted girl enters school, she is taken in charge by a tactful "big sister" if she is a Freshman or by a "hostess" if she is above the Freshman class, and very often her appearance undergoes a great change in a short time. If a girl is a good student, she is asked to help some other girl who has been absent or has entered late. So it goes, and every girl is given an opportunity to serve as her ability warrants.

Three years ago the dress problem became acute, as it does in every high school, and after much discussion and many warm debates, the girls adopted dress regulations drawn up by themselves and administered by a committee of eight, elected each semester. If a girl, for some good reason, finds violation of the regulations unavoidable, she may secure a permit from the girls' adviser, otherwise the dress regulation committee is apt to ask for an explanation. Because these are their own regulations, administered by themselves, they are enthusiastically approved, and violations are comparatively few.

Student conduct in convocations of girls is managed by a convocation committee; and in the library by a library board composed of members of the Girls' League and the Boys' Federation. Perhaps these examples are sufficient to show the place which the league occupies in the school. We like to call it student co-operation rather than student government.

A brief summary of our actual organization will probably show best just how we attempt to realize the fourfold purpose of the league. Every girl who enrolls in the school automatically becomes a member of the league and is asked to pay dues of ten cents a semester. The executive council, composed of the four general officers, the four girl department directors, the faculty adviser of each department, the girls' adviser, the chairman of the dress regulation committee, and eight room representatives, meets every two weeks to transact all business except that which the council refers to the entire membership. Of the officers mentioned the department directors are appointed; all others are elected. The girls of each first-hour class elect a room representative, who collects dues, makes announcements, and refers to the executive council any measure desired by her constituents. The fifty or sixty room representatives are under the supervision of the vice-president and elect eight of their number, two from each floor, to represent them in the council.

The executive council of the league and the council from the

Boys' Federation form the Associated Student Councils. A meeting is held each week for the transaction of business of general school interest and for the study of parliamentary law. We find this more effective than a general student association.

The detailed work of the league is done through four departments, and each girl signs a blank at the beginning of each semester, indicating the department in which she wishes to work. She also makes first and second choice of committees and is assigned as nearly as possible in accordance with her desire. The departments hold regular meetings once a month during school hours while the Boys' Federation is holding its general convocation.

The Social Service Department takes charge of all philanthropic work, such as Thanksgiving and Christmas donations and drives of various sorts which have been so frequent since the war. This department has practically adopted an orphanage containing from eighty to one hundred children and with the help of the whole school provides their Christmas gifts. It has also helped to furnish a playroom and nursery and sends two or three girls each week to tell stories and carry on simple kindergarten work with the smaller ones. Contact of this sort educates in civic interest and brings to the attention of the students preventable causes of unfortunate conditions. The department assists the City Social Service Bureau in times of special need. In the school itself one committee has charge of the halls and lavatories; another provides "hostesses" for the new girls above the Freshman class and entertains them at an informal tea; another has charge of the big sisters for the Freshmen; another telephones, visits, writes, or sends flowers to girls who are absent or sick more than three days; another has charge of the girls' locker-rooms, providing two clerks each period of the day; another co-operates with the faculty in the matter of convocation conduct; still another has as its members only those recommended by the faculty for scholarship and tutors girls who need help in their studies for a time. That its work is valuable is shown by the fact that many teachers ask its help, and about 80 per cent of those aided pass in their subjects.

The Vocational Department assigns one or two girls each period to take charge of the office of the girls' adviser and to do filing, typing and errands. There is also a committee which is making a simple record of business opportunities for girls in the city, their requirements, wages, and chances for advancement.

Besides this, a card catalogue is being made, giving information as to the location, expenses, and entrance requirements of various colleges. These are not intended to be exhaustive but to make accessible the most necessary information. This department also furnishes guides for visitors; has charge, through two committees, of relations with the grade schools; and assists the vocational guide of the school whenever she asks it.

The Entertainment Department has charge of all programs and is ready to furnish special numbers whenever asked. Various committees manage the all-girls' party the first of each semester and the different class affairs from the Freshie Frolic with the big sisters present to the tea for Senior A girls and their mothers. One committee is making a real study of organized recreation and games and is doing some excellent work. Another furnishes programs for various homes and orphanages in the city, which are enjoyed by the inmates and give the girls a thoughtful interest in civic and social problems.

The Personal Efficiency Department, with the girls' physical training teacher as adviser, has charge of all sports, interclass contests, hikes, and health programs. It has committees in charge of the point system, whereby girls may earn school emblems for certain physical and health attainments, and in charge of the gymnasium lockers and the girls' restroom.

It must be confessed that, while nothing is done unless it has value in itself, many things have been added to our program in order to provide a wider range of opportunities for the great number of girls we have enrolled. Almost every girl covets a place on the Girls' League Honor Roll more than any other honor in school. This is compiled at the end of each semester and its requirements are: (1) satisfactory service in some phase of league work, (2) a grade of not less than C (81-89) in each subject, (3) high ideals expressed in conduct, and (4) observance of dress regulations. The first, third, and fifth times, the girl's name is simply inscribed on the honor roll; the second, fourth, and sixth times, she is presented in convocation with a bronze, silver, or gold pin in the form of the league emblem, bearing the league motto, "Honor, Service, Loyalty."

It will be seen that this is an honor not easily acquired and yet within the reach of any earnest girl. Four years ago when we formed our first honor roll, twenty names appeared; last semester over two hundred girls qualified. This shows in some measure the growth of the spirit of the league.

TRAINING BOYS FOR LEADERSHIP²

BY FLOYD S. HAYDEN

It is the purpose of this article to explain the gradual development during the last seven years of a form of student-faculty co-operative government in Citrus Union High School. The school is located in a semirural community in the foothill Citrus belt east of Los Angeles. During the period with which this report is concerned, the enrolment of the school has grown from approximately one hundred to three hundred students, and junior-college, night-school, and various lines of vocational work have been added.

The school originally had class and student-body organizations with no special objective in view. The interests of the several groups were at such variance that sometimes loyalty to the school was superseded by class or group loyalty. The first task of the school in creating a co-operative spirit among the different group organizations was to develop a kind of superloyalty to the interests of the school as a whole. Athletic, debating, oratorical, and musical contests made a strong appeal to the students, and it was soon realized that in order to win in these contests a united school spirit must be maintained. With this end in view, a Welfare Committee was organized, consisting originally of the four class presidents, the student-body president, and the principal.

The year before the committee began its work, class spirit had run high, manifesting itself in class fights which frequently resulted in injury to school property. The High School Board joined in the co-operative plan of school improvement and through the Welfare Committee made announcement that if the classes would refrain from class fights and devote their energies to interclass and interschool athletic contests, the board would put \$250 into athletic equipment, an amount equal to that spent the previous year in the repair of damaged school property. This met with unanimous approval on the part of the students, and the trustees purchased the equipment. Interest in school activities increased, and the students found themselves beginning to work as a unit.

Another situation which confronted the Welfare Committee was the established custom of ducking the entering Freshmen. The Sophomores were the active participants, but the upper-class

² *The School Review*, XXX, 187-192. March, 1922. Abridged.

students spurred the younger students on. Even the High-School Board despaired of curbing the evil, which had several times resulted in personal injury to students. However, the Welfare Committee attacked the problem, and the second year the upper-class students placed certain limitations on the ducking which eliminated its more serious aspects. The third year the upper-class leaders met the Sophomore leaders and told them that they had taken a new view of the matter, namely, that the Freshmen were new citizens coming into their democracy and that it behooved them to welcome them with the same methods used by the best democracies. A committee of Sophomores waited on the principal in his office and asked his opinion. He told them that he himself had been a newcomer to their community a couple of years before and that, even though there was a convenient pool and fountain in front of the public library, he had not been ducked. On the contrary, he had been welcomed by a committee from the Chamber of Commerce and also a committee from the church and made to feel, by the citizens of the community, that he was one of them, entitled to all the enjoyments and privileges of their democratic community. The committee saw the matter in its broader light, and the Sophomore class of that year had the honor of freeing the school democracy from a custom that was working contrary to its best interests.

The Welfare Committee had proved its worth. It had become the nucleus of a co-operative student-faculty government emphasizing spirit more than form. The machinery of the committee has been added to from time to time, but the spirit of our school democracy has ever been held as essential for the operation of any form of government. Edmund Burke tried to bring before the English Parliament the vision of a "true democracy growing out of the nature and condition of things." We have tried to realize that we are living in a school surrounded by real problems and that we as students and faculty are co-operatively responsible for the solution of these problems and the establishment of ideals in athletics, society, and scholarship.

As the size of the Welfare Committee grew, the idea was to make it more representative of the entire student body and faculty. First, the faculty representation was increased to five. Besides the principal, the girls' adviser, the boys' adviser, and two other teachers active in the social, athletic, or dramatic life of the school were included. The junior-college class president was then added to give representation to that body. The girls of

the school were as yet without direct representation, unless some class or the student body chose a girl for president. About three years ago, however, a girls' league was organized in the school and the officers of the league, president, vice-president, secretary, and treasurer, were added to the Welfare Committee. This plan had one defect, however. The constitution of the girls' league required the officers to be chosen from the two upper classes, and the Freshmen and Sophomore girls were still without direct representation. A plan was then adopted of electing four additional members, one from each class, and in case the majority of representatives from a class were boys this representative was to be a girl or vice versa.

The name of the body was then changed from Welfare Committee to Welfare Council. A brief constitution was adopted in order to keep before the students the objective of the welfare body.³ It is not the purpose of this body to usurp any of the rights or privileges of the various classes, the athletic committee, the study clubs, or the student body. It is a council to consider problems vitally related to the welfare of the school. It aims to unify and harmonize the various departments of school life, to consider the moral and social problems of the school, to create and maintain scholastic and moral standards in the school, and, above all, to create a vital, wholesome school spirit, in the atmosphere of which every school activity can work with ease and freedom.

Training for effective citizenship. In addition to formal courses in citizenship, training which appears to incorporate practice in effective citizenship is now provided in many schools. Archer canvassed such training for citizenship and presents in the following article an account of the character of such training and the problems to be solved in making the training effective. A student's reaction to this form of training for citizenship as conducted in the Radnor High School of Wayne, Pennsylvania, is given in the passage from Satchell's article on student participation in government.

³ See the original article for a copy of this constitution.

SCHOOL GOVERNMENT AS AN EDUCATIVE AGENCY⁴

BY C. P. ARCHER

The fact that most of our schools have not attempted self-government is no absolute indication that it should not be attempted. It has been tried in many schools and has been abandoned. In some cases the plan failed because the teachers were not thoroughly committed to it. In some cases the students were not prepared for self-government. In other cases the teachers thought that when the student-government plan was started they could go on a vacation as far as discipline and general administration were concerned. In spite of the fact that student government has failed, the principles of acquiring habits and attitudes through practice are so sound as to make the plan worthy of consideration at least.

As shown by the large number of attempts resulting in a great variety of successes and failures, the matter of self-government or even partial participation in school control is merely in the experimental stage. Consequently, it is not to be recommended that every administrator should accept it as a settled worthy institution or that he should even give it a trial. On the contrary, only the trained administrator of exceptional personality and experience should consider this plan of training for leadership, until it has been shown to be an assured success to a greater degree than at present.

The administrator who has this personality and training can contribute much to the cause of education by demonstrating the feasibility of such a system. At the outset, he must realize that in order to make the plan a success, greater effort must be put forth than is required for the successful operation of our more common system of school control. The administrator must carefully prepare the way for the participation of the students in school affairs by taking the students into his confidence and showing them the benefits to be derived from such a plan, the dangers to be avoided often due to rash moves or to lack of interest, the whole-hearted desire on the part of the faculty to co-operate, stimulate, sympathize, and aid in every way to make the plan a success. He must show them the possibilities for development in the plan as well as the responsibilities. He must fill them with a determination to overcome their selfish interests for the good of

⁴*The School Review*, XXXI, 430-438. June, 1923. Abridged.

the entire student body. They must catch the enthusiasm of service to their schoolmates to make "our school" a better one for all concerned.

The students must be brought to realize the importance of selecting the best officers and of demanding that each officer who accepts the honor should sacrifice for the good of the people whom he represents. In short, much time and effort must be spent in carefully preparing the soil for planting the seeds of a democratic government. Lack of preparation has been one of the chief causes of failure.

The faculty must also be prepared for the inception of the plan, be thoroughly committed to it, and have faith in its success. Every teacher must realize the merits of the plan and the details of operation and be willing to give time, attention, and patience to stimulate and direct the pupils to exert their greatest efforts and to keep up the enthusiasm. No administrator can afford to attempt student government without the whole-hearted co-operation of every member, of the faculty—in fact, the enthusiastic co-operation of every member.

Being thoroughly confident of success, with the faculty fully committed to the plan and the students well prepared, the administrator may then proceed with the organization. Students and faculty must participate in the organization. No plan prepared by higher authorities and handed out can be expected to have enthusiastic acceptance or to carry with it responsibility for success. With the object of organization in mind, representatives may be chosen to meet with the faculty representatives to draw up tentative plans for organization. The method of choosing these representatives will depend on the local school organization. A committee selected in some such manner, which we may call the preliminary committee, meets, and after careful consideration returns to a future assembly with a proposal for selecting representatives to a constitutional convention or some such committee which is to draft a plan for permanent organization. According to the plan adopted, representatives are chosen to form a constitutional committee. This committee should include faculty and students, selected fairly for all concerned.

A permanent organization is then prepared, with a constitution, if such seems best, which is usually the case, in order to guide the students in future activities. It is doubtful if any one constitution will be suitable for more than one school. It should be the outgrowth of the ideals and purposes of the local school.

A sample constitution may be secured from the Lincoln School of Teachers College, New York City. Others may be secured from other sources. A constitution should be drawn up to fit the needs, one that the group feels will best serve the purpose of the local school. This permanent plan should make provision for the name of the organization; the purpose of the organization; amendments; adoption of plan; legislation; administration; election, duties, and powers of officers; election, duties, and powers of representatives; committees needed for permanent work; regular meetings of council, if it be called such, etc. This permanent plan is then referred back to the assembly, to classes, or in some way so that the entire student body becomes familiar with the plan of the permanent organization. If not accepted for adoption, the committee may be asked to make such changes as are necessary and then submit it again. After all, the plan of organization is not as important as the attitude, spirit, co-operation, enthusiasm, and the faith in the idea. With the right spirit of willingness to surrender self to the wishes of the majority and render the best service to the school, a poor plan will be revised to meet the needs or a new plan adopted, if necessary, in the light of past experience.

After the organization is perfected and the scheme is initiated, one of the greatest dangers is to be confronted in making the organization serve the purpose for which it is intended; that is, it must be made to function. There must always be something to do, and the enthusiasm in the service must be kept up. This required the constant vigilance of principal, teachers, officers, and students to keep ever present a stimulus for activity. An inactive organization soon atrophies.

STUDENT PARTICIPATION IN ADMINISTRATION⁵

BY J. K. SATCHELL

The following description of a school organization, fully developed and provided with a constitution, was prepared by a student.

Student government, to my mind, is an institution by which all student affairs, other than curricular, are managed by the students themselves. In our school it embraces management of all

⁵ From an article, entitled "Student Participation in Administration," in *The School Review*, XXX, 733-741. December, 1922.

problems which in any way involve the students and which can in any way be solved by them. Our constitution says that the purpose of our Students' Association is "to afford an effective means through which the student body may express itself."

Our government in its organization is closely modeled after that of our nation's. We have at the head our president and vice-president—the association's executives. Under them, similar to the President's cabinet, are our four directors—of law and order, of public and private property, of sanitation, and of publicity.

The Executive Council is composed of two councillors from each form, and the House of Representatives is composed of one representative from each record section.

The four departments together embrace practically every problem that can possibly arise. The Department of Public and Private Property includes care of school supplies (books, etc.) in the hands of the students and also of lost and found articles. The Department of Law and Order is in charge of all traffic problems, of all problems of general order in the school (in assembly and in classes), and, more specifically, of fire drills. The Department of Sanitation has under its jurisdiction the lunchroom, the lavatories, the classrooms, and the school at large in whatsoever way they are concerned with physical appearance and cleanliness. The Department of Publicity serves the other departments. It executes all plans of propaganda—whether it be publicity in the school paper, posters, or blackboard writing. Each director has under her some number of assistants, whose duty it is simply to co-operate with her in her work. Our legislative departments, are, of course, our Council and House of Representatives.

At the top of it all, or, rather, side by side with it all, are our faculty sponsors, more formally called the Board of Directors. The Board of Directors consists of six members of the faculty, appointed by our principal. We have also a faculty treasurer who takes complete charge of the association's finances.

The very first consideration in the election of a girl is that of her ability for the office. If she is capable of holding the office and discharging her duties efficiently, the next question is that of her standing in scholarship. No girl who has failed in any of her subjects during the preceding term can hold office of any kind under the Students' Association. "Elect the girl who can best serve you!" That is the order repeated term after term, and

we girls, because we realize the importance of choosing capable officers, take the elections seriously and vote carefully.

We nominate through petitions. At the close of every term we take out petitions for vice-president and councillors. Every petition for vice-president, to be considered a nomination, must be signed by fifty or more students; every petition for councillor, by twenty-five or more. These petitions are then turned into the Association, and the list of nominees drawn up accordingly.

Very shortly afterwards, in assembly, we are introduced to our nominees for vice-president. (Every form votes for its councillors only, but the whole school votes for vice-president. Our vice-president is elected from the seventh form, and automatically becomes president when she enters the eighth, at which time another election is held for a new vice-president.) It is customary for the nominees to give a very short and informal speech—very often extemporaneously. Everyone very simply and directly pledges herself, if elected, to carry on the work of her predecessors and to do all in her power to make ours a better school and promises to do her best in the interest of the school—elected or defeated. Their spirit is always most admirable. Following these campaign speeches, with the advice of our leaders to “choose wisely,” we vote, and the records of these individual record-room elections are later added together and the results announced in the assembly room.

Our representatives and vice-representatives are elected at the beginning of the term in the respective record-rooms in which they are to serve.

Our Students' Association is undoubtedly a success. When one takes into consideration the short time it has been functioning, plus a number of difficulties which are present in our school in particular, one realizes even more clearly how really great an achievement is our present smoothly-running organization.

The difficulties I am speaking of are the inherent qualities in so large a number of our students. Our school is composed of students of very different races and nationalities—mostly foreign-born. The first problem, of course, would be assimilation, before these different types of girls can form into a unit association. The need of unity would, of course, not be nearly so great in curricular activities, where the object striven for is so very impersonal. But when it comes to working together for the purpose of organizing a government whereby all of us may be satisfac-

torily governed, then there is that very great need for thorough assimilation.

Second, to most of us foreigners, any form of self-government is extremely new. Most of our foreign-born parents never knew of any such thing as citizenship, or interest in government, or participation in it. They were governed—by force or otherwise, but of the making of that government they knew nothing.

I say again—our student government is a *great success* in purpose, in practice, and in result in *every* sense of the word.

The student assemblies are carried on entirely by the girls, and the president of the Students' Association presides.

All of the important things which have gone on in the Council and House of Representatives are presented to the girls. If there is anything which it has been decided the girls should discuss, it is presented to them in the form of an open forum. The opinions of the girls are, of course, helpful to the officers. Sometimes there are drives, especially for the Students' Association membership dues. These drives have always been very successful.

The objects of these assemblies are to get the girls to talk frankly among themselves about the problems which confront the Students' Association, to enlist them on the side of the right thing by convincing them that it is right, and to help teach them self-dependence.

The Council consists of two girls from each form, making a total of sixteen members. When the Council assembles, which occurs every second and fourth Monday of the month, the meeting is presided over by the president of the Students' Association.

One of the important movements connected with the Students' Association is the senior guide plan. At the beginning of the term a special corps of guides is appointed, and these girls assign to each of the Seniors one or two Freshmen. The guides generally become very friendly with the new girls and try to make them feel "at home" and happy. The Seniors explain the rules and regulations of the school and try to help the Freshmen as much as they can.

The study hall is run by the students. There is one study-hall teacher who does the organization work and the planning and also the follow-up work which is necessary to bring the desired results. The officers of the periods are chosen by the study-hall teachers from those who are held in respect by the students, not only for their scholastic standing, but for their personality and

for their character influence. Girls who are persistently disorderly are reported to the vocational guidance department, this disorder affecting their eligibility for recommendations to positions.

The secondary school and recreation. Although certain schools may at times make undue recreational demands upon pupils, the fact remains that adolescents are greatly in need of training in desirable recreative activities. With regard to the training given in schools, many parents doubtless agree with the Philadelphian who wrote the letter from which the following excerpt is taken to the editor of a magazine.

"I am a plain man, and not much in the way of writing, except accounts or letters of business; but I think for all that I can make myself understood; and I have something to say which I should be very glad you would note.

"I have been pretty lucky in trade. I have made money, and have a parcel of girls growing up. I subscribe to your magazine for the benefit of my daughters, having sent them all to Mr. J's school. They can read very well, and they like reading too. But what's the good of reading if they don't learn something?—You see that what angers me is that people think, when they begin to get rich, that they must be in the fashion and spend their time doing nothing. My daughters want to make great parties, just as if they'd always been used to it, and have whips and jellies and sugar-houses and kisses and nonsense—not that I care for the money, sir! I'm sure the children are welcome to as much as they can eat; but I think they'd better be at work than turning the house upside down. Then they can't stay in the house a single day, but walk up and down Chestnut Street, and go out to Schuylkill to parade about the Basin, for exercise, forsooth! Their mother tells them that in her day. . ."

The fact that the foregoing passage was written to the *Port Folio* in 1818 indicates only that our schools have faced certain problems for more than a century. While many of our elders still tell youth that in their day boys and girls were tractable, certain schools are providing recreational guidance in ways which appear to aid in the attempt to salvage humanity. Some of the

means thus employed for controlling environment in beneficial ways are described in the following passages.

THE SCHOOL AS A SOCIAL CENTER⁶

BY EDWARD J. WARD

The public school is a socially supported institution but, in its use as simply an education place for children, it is individualistic in the tendency of its training. The main lines of conscious obligation and responsibility do not run horizontally from child to child, but perpendicularly from teacher to each child. This is necessarily the case. As long as children are under a teacher, and as long as they are children they must be under a teacher, the chief feelings of the child are directed upward, whether they are love or fear or dislike, toward the teacher, rather than outward as social feeling. Moreover the whole spirit of child study is the consideration of each child as an individual and the main tendency of its training is to develop the child's powers and capacities, his self-reliance, and independence. And this is as it should be, for the period of independence is a necessary stage of the child's development. Only by this training at this period can the later consciousness of interdependence be strong and free. Its service in *social* training the schoolhouse can render only as it is made a fraternal meeting place of adults.

The public school has not failed so far as it is used. It has done and is doing its service to the community through the children. The citizens have failed to use this neighborhood building as political headquarters and have failed to provide for its use as a civic training place for young men and young women in addition to its use as a formal education place for children.

With the one-third use to which it is now put, the influence of this institution is to breed that spirit of obedience which makes it easy for political and economic bosses to rule, and that spirit of reverence for things as they used to be when the teacher was young, which puts a drag on the progress of society and stifles spontaneity; and that spirit of self-centered individualism which chopped us up into a thousand and one little groups mutually exclusive, separated, suspicious of each other, with no development of community feeling, social consciousness or democratic sense.

⁶ *The Social Center*, 140-142, 1913. Reprinted with the permission of D. Appleton and Company.

The fact is that to-day the public school building is to the community what the house would be to the family, if it were used only as a nursery for the children. This use alone would not make a home. The neighborhood institution one-third used is parental and individualistic in its influence, just as the household would be if it were used only as a place for children. For the family group the house is a home when it is, first of all, a place of democracy, of equal union, of free expression and group sense between adults; then a place of parental guidance of young children, restrained, and individualistic, then for those between these two, a place of training during the transition from childhood to maturity.

When the neighborhood building is used first as a common democratic association place for adults, and by them made the center wherein young people (out of school) may find opportunities of training for citizenship in the practice of self-government and for wholesome recreation, this institution in the center of the neighborhood becomes in its influence for the neighborhood group what the home is for the family group, each, of course, with its special functions, the one based upon the primary sex relation, the other based upon the common interests of neighbors, but each including all of the people, old, middle-aged and young, within its circle.

This then is the first matter of practical politics for a neighborhood organization of the adult citizenship to take up, the opening of the building, and the securing of the directing service which will make it a club house for the young men and for the young women of the community, and the securing of a combination gymnasium and assembly hall which will equip it for their recreation. Here is use of the building for at least three evenings in the week, one for adults, one for young men, and one for young women.

RECREATION IN THE HIGH SCHOOL FROM THE POINT OF VIEW OF THE DEAN OF GIRLS¹

BY HARRIET HAYES

America has always believed that her safety depends on an educated citizenry. She would have her young men strong, well trained, resourceful. Her young women must be self-reliant,

¹ *Addresses and Proceedings of the National Education Association*, LX, 873-878. 1923.

wholesome, competent in whatever field of activity they enter. And she calls upon her schools to produce such young men and women. As educators we are expected not only to produce citizens who shall have mastered certain subjects, but to somehow train them so that they justify America's pride in her youth, and contribute character and a trained intelligence toward the solving of her problems.

Now all this is not set down formally in any curriculum. It is something that we feel rather than what we have been instructed to do. It comes to us with every parent who calls at the school to talk over the work and welfare of his child. And it is the pressure of this great desire that has brought into being what has been called the "social program," or even the "social curriculum."

Teachers are becoming more and more social workers in the true sense of the word. A questionnaire filled out by teachers in charge of clubs and other outside activities in our high school revealed the fact that several of them spent an average of two hours daily on these activities—all of this work in addition, of course, to a full teaching program. There is no formal recognition of such work as this, and it is almost always voluntarily assumed. The service rendered is offered because all of us are conscious that America has made us responsible for the education of her children, and education is only partly a matter of books and subjects. It includes social contacts, an opportunity *to play* with one's fellows as well as *to study* with them. Not the least valuable lesson taught by the war was that people learn to work together by playing together. Petty social barriers give way before larger, more truly social recreation projects. Subjects can be learned in correspondence courses and by tutoring, but the social contacts of the public high school give a preparation for citizenship that is incomparable.

We are so often asked in one way or another to justify the social activities in our schools. Puzzled parents cannot understand why there should be such a multiplicity of clubs and plays and dances and athletic activities. They have not realized the value of these agencies in protecting their children. In a day when commercial amusement organizations are offering on every hand the most alluring, easy, passive pleasures—when hotels, restaurants, and amusement parks offer springy, jazzy music, and insinuate with it an artificial and cheap sophistication, it is time that more wholesome pleasures, within the reach of all and without ulterior motive, be offered to our boys and girls.

It is idle to pretend that the American home takes care of the social life of its children. It does not. And money has nothing to do with it. The wealthy patrons of expensive private schools are as helpless before the problem of keeping in touch with their children as the humblest of our people. The automobile, with all its sinister possibilities, has greatly complicated the problem.

A freedom unimagined twenty-five years ago has come—the gift of the new century—and our problem as educators is not to attempt to dam it up with frail restriction and prohibitions; the only thing we can do is to train—train patiently, carefully, as skillfully as we may for a right use of freedom, for higher standards, for wiser choices.

This work cannot be done in the classroom nor can it be left to chance. It must be accomplished by steady, purposeful social engineering. There is immense possibility of waste in this field, and feverish activity through a school is as bad as stagnation. A halting, hesitating program is almost worse than none at all, for situations so often get beyond control and work serious havoc. In this connection are those clubs started for some worthy purpose by an enthusiastic group of kindred spirits and which so often develop into exclusive little societies and undemocratic ideals.

Clubs of this kind, once firmly entrenched, are among the most difficult of our problems. They are based on such a fundamental human instinct. There are always people who can do their best work, and many who can work only, when associated with congenial people. They refuse to be drawn into large or miscellaneous groups and resent any obvious pressure to such an end. If the social program is carefully planned this tendency can be made use of in various legitimate ways, such as committee service. After all there is no reason why friends should not work together. Disagreeable tasks are not half so onerous if the labor is shared by people with whom one can work without irritation. It is only when snobbish exclusiveness manifests itself and tries to exert influence that it must be broken.

Social cliques may and should be converted into helpful allies. When they show vicious anti-social tendencies they must somehow be combated and shorn of power. But I am convinced that the method used must be that of substitution and friendly reasonableness, never that of antagonistic sharpness. Whenever an administrative officer sets his (or her) jaw and announces, "It

must be, because I say so," he minimizes seriously his chance to work out an effective social program in his school. For social progress must rest upon hearty cooperation of the whole group. If individuals will not come into the work—or play—with the ideal spirit, let us take them on a compromise basis, and watch for a chance to improve their attitude.

To be truly democratic and efficient, a social program must include everybody. No member of a properly organized school should be able to feel that he has no social responsibility. Whether or not an individual pupil has much time to give the various social activities, his interest and pride must be aroused, and that intangible thing called school spirit must be created. A good school newspaper will help in this, a magazine that prints the names (correctly spelled) of *all* the students, and which publishes lists of club memberships as well as of those taking part in various events—such small things as this give a very strong feeling of *belonging*. Those who have not already connected themselves with some activity should be drawn in. Senior friends for Freshmen are valuable to both sides, and as much discriminating recognition as possible should be given those who offer service. Honor rolls for those who have attained distinction in various lines of work, honorable mention, recognition of good committee work—all those create better feeling and pride in worthy membership in a worthy group.

Whether a number of small clubs or similar units is desirable, or whether there should be a few large organizations with numerous branches will depend on the individual situation, and on the ability and interest to be found in the leaders.

The mention of leaders brings us to another of the problems to be solved. In too many schools the burden of outside activities is borne by only a small part of the faculty and students. There is no general plan for equalizing the load and preventing the overworking of a few enthusiastic souls. We have all seen the most able and conscientious members of a school go down under too great a strain. Some means must be devised for preventing such waste. Perhaps the most nearly adequate scheme yet worked out is the so-called "point system," which undertakes to limit the outside activities which a student may carry. Under this plan, every kind of activity, including membership in clubs, etc., is given a certain value, expressed in points, and a record is kept of participation in activities by all students. The num-

ber of points a pupil may carry is determined by his previous record in school.

There is more or less machinery connected with this plan, and much bookkeeping on the part of the point system committee. There are in some places accompanying features such as an honor roll and gold pins for people who have made notable contributions to the social life of the school. But the chief value of the plan lies in the protection it affords to the over-zealous and the opportunity it creates for the development of new leaders.

No such plan has been devised to protect faculty members from sacrificing themselves on the altar of social service. It is only as the extent of their service becomes more apparent that they can hope for relief. The social leader in a school, however, should catalogue the faculty abilities carefully and see that the work is divided as fairly as possible.

I have been using the term social in its larger, more general meaning. But the affairs which are social in the narrower sense are also among our most intricate problems. Parties and dancing are matters that require much attention on the part of the social director.

Parties of the right sort are essential to the education of our boys and girls. Banquets to celebrate the close of some athletic season, luncheons in honor of some guest, teas for parents, outdoor suppers or picnics—every one of these functions is full of possibilities for social education. There should be as many occasions of this nature as a sane and uncrowded social calendar will include. Most of them should be simple and informal, involving as diverse groups as possible; but several times during the year there should be functions as formal as can be managed, with toastmaster, speeches, and all the accompaniments of a real party. Comparatively little money need be spent on these. A surprisingly dignified banquet can be served with the aid and advice of the domestic science department at a cost of from fifty to seventy-five cents a person, and the burden should fall, not on the individual diners, but to a large extent on the school social fund. The practice of going to the local Waldorf Astoria or the Palace restaurant is abominable in its pretentiousness. It may take a vast amount of tact to persuade students to have an important banquet at school, but it is worth any effort because of the opportunity it offers for training. People, especially high-school people, love to "get up things." There is never any difficulty in finding persons who are glad to do the work, except

possibly the clearing away after the party is over. Even here we find as a rule the leaders still leading. There is always some generous soul who will say, "Oh, put me on the clean-up committee"—and if you give him a few favorite friends the job is done.

After every function if possible there should be a "post mortem" on the part of the committees in charge. This is essential if the educational value of the affair is to be realized. The successful features and factors involved, the failures and the reasons for them, should be discussed. Things to be remembered for future use, pitfalls to be avoided, should all be noted and filed for reference. Individuals should be commended for especially efficient service. It takes some time, but it is time well spent.

In connection with filing information for reference, I might speak of a blank which we have worked up for use in the University High School, (Oakland California) entitled "Registration of Events." When a special event is planned, those in charge come to the dean's office for a blank and proceed to fill it out. All the details which must be thought of in planning a successful affair are provided for. The nature of the event, the date, time, and place, provisions for music, faculty sponsors, members of committees, plan of procedure, estimated expense and method of financing—all these are to be accounted for. When this much of the blank is filled out to the satisfaction of the dean, the affair is formally sanctioned. And after the event has taken place, the remaining items on the blank are filled in. These include the record of gross and net proceeds, disposal of surplus funds, names of any who have rendered noteworthy service, and suggestions which may be of future use. When all this information has been set down, the blank is filed in the proper place, and used for guidance for the next similar affair.

The formal dances, such as the senior class dances, offer an exceptional opportunity for training—one which I think is not often used to the full. The best handling of this situation that I know of was done by a very wise dean who instituted the practice of going about before each Senior dance (the formal event of the term) and talking for a few minutes to the boys and girls separately. Questions of the customary dress, the position of the chaperons and how they should be treated, standards in general and why certain things are done and others not, how the success of the evening depends on the tone, which is given by the girls

(this to girls)—and how the success of the evening depends on the thoughtful consideration of the boys, who must of course take the initiative (this for boys)—and how the dances have been growing better every term because standards have been raised each time—these topics are discussed. Such talks are invaluable, because they have been given with friendly impersonality, with the idea of making “this dance the best one ever given.” And the dances in that school have been conducted with a dignity and genuine courtesy that is remarkable.

Dancing, I suppose, is one of the most complex matters to be dealt with in the social curriculum. While communities vary in their attitude toward dancing as a legitimate social pastime, generally speaking, young people are going to dance. Whether we like it or not, it is so. And what are we going to do? Are we going to ban the activity altogether and dodge the responsibility? It is about as easy to do as for our government to keep out of European difficulties. I have heard of one school in a pious community which tried this plan with the result that its young people went elsewhere for their amusement—elsewhere being in this case a beach resort of unenviable reputation some miles away. Avoiding is not educating. Neither is permitting dancing to go on in a haphazard way educating. Students must be made to do some thinking on the subject and to make some thoughtful choices. We cannot hope to change the prevailing style in dancing, but we can help our boys and girls to see and do the right thing about it, and hope for success by appealing to their sense of right and their loyalty to the school. Regulations and rules and the weight of authority are futile. They may check and hold the situation in a superficial way, but they are worse than useless in any constructive program. The question must be placed squarely before the students themselves and responsible action required on their part. And if the whole subject is frankly and reasonably presented I have not a doubt in the world that the actions and attitude of the school will be sound and right. A student committee made up of popular and thoughtful members will be able to control the kind of dancing far more effectively than any amount of faculty watchfulness, and in addition the student body will have the satisfaction of realizing that it has raised the standards of dancing a little above those required in public dance halls, and will feel proud accordingly.

The whole structure rests on the basis of cooperation, as does our whole system of education. The day of birch rod is

over; old fashioned parental authority seems also to be rapidly declining. It is for the schools by means of a strong, conscious effort, to catch up the loosened reins of control and bind them firmly again in the lives of our pupils by insisting that they decide, and choose, and learn the great value of self-control. And I believe that a vigorous administration of a sane social program, one that will provide plenty of wholesome interest and amusement for American boys and girls, is one of the most potent agencies for this purpose.

RECREATION IN THE HIGH SCHOOL FROM THE PUPIL'S POINT OF VIEW^{*}

BY VOLMER SORENSON

Two important questions are these: For what should the high school building be used? In what activities should the high school participate? The rural high school should be a community building, a center for the activities of both old and young members of the community. It is exactly this that our high school tried to be. How successful it has been, I am unable to say.

In the first place, the school gymnasium was opened to school parties, class parties, and, at times, general community parties. Proper hours and faculty chaperons made these parties very orderly. All went well for a time and pupils soon regarded the building as a center for their amusement. A controversy soon arose, however, over the question, "Shall pupils be given the privilege of dancing in the school building?" Of course the school board had to decide this question, and the board looked with contempt on the matter of dancing. As no other satisfactory amusement was provided, the pupils gradually drifted to commercialized places of amusement—the public dances, pool halls (until forbidden by law), and other places. Thus the pupils passed from a communal type of recreation to a commercial type. The influences of the Great War, the changed attitudes which developed during and after the War, and the extended use of the automobile had much to do with the matter. The young minds were filled with ideas of good times away from home and other controlling agencies. At last our rural high school board awakened to the importance of the issue and decided to permit pupils

^{*} In an unpublished paper.

to have their little dancing parties at the school. But modernism had robbed the pupils of the satisfactory feeling of staying in one place, and, until the community institutions can regain a foothold, they will not be centers of recreation.

Another unfortunate decision of the board led to the purchase and installation of a motion picture machine and the opening of the movies to the public. The mistake lay in the harping on "educational reels" that put the public to sleep, so that the town theatre got the people the next time. Of course things like this can be easily remedied, but it takes a long time to wake up.

There are other activities not classed as sports that do tend to give a feeling of solidarity to high school pupils and to give the public faith and attentiveness to their school. These are debating, oratory, glee club work, and orchestra work. All these activities tend to take much of the time of the students who participate, and thus keep down the undesirable tendencies. They give pupils a chance to get together and in doing so they make themselves and make the school. An institution is not a high school without these special activities and no one is a real teacher unless he promotes them.

At our high school we had typewriting contests, speed contests, arithmetic contests, contests in theme-writing—both local and interschool. Within the last few years the school fair was started which brought all the people together to see the year's work. The manual training and home economics exhibits were outstanding. Many of the exhibits came from pupil-work, for which only one-fourth or one-eighth of the regular credit was given. Of these we may mention projects as—poultry, calf-raising, canning, raising potatoes or corn, and general gardening.

Of course, it must be admitted that sports are the greatest socializers that a high school has—but they usually promote themselves. In most rural schools, basket-ball has been greatly overdone, and the real motive for school work has been set aside. Properly organized sports, however, together with such recreations and projects as have been referred to in this paper aid immensely in making the school stand out as the main achievement in a rural community.

Displaying the world's work to the community. How a county high school can be of general service to the community in which it is situated is fully exemplified by the Fergus County

High School of Montana. This institution has become a social center in a variety of ways. The following is a letter which has been sent out to the members of the community by the principal of the school.

A HIGH SCHOOL AS A COMMUNITY CENTER^{*}

The Fergus County High School is your institution. In it are trained the boys and girls of the county, and a large number of adults, both men and women, attend also. For those of you who cannot attend we want to call your attention to some of the assistance this institution offers to individuals, to schools, and to whole communities.

The high school is a clearing-house for the needs of the community. It will analyze ore, water, soil, and food. It will test milk for butter fat, seed for germination, soil for moisture, and cloth for adulteration; furnish instruction in cheese- and butter-making; identify weeds and poisonous plants; give information on crops and marketing, and help organize cooperative enterprises; assist in vaccination of stock, planning of barns, and furnish information on all agricultural subjects.

It will send out circulating libraries, bulletins of all kinds, lists of books, magazines, and advice on suitable reading material for the home on various subjects; help to plan programs, games of all kinds, pageants, and plays; furnish constitutions for community-center organizations, and send out material for all these activities.

It will help plan and furnish cost estimates for farm buildings and typical houses, furnish information on income tax, land, and bin and hay-stack measurements, compute interest, and help you with any mathematical calculation.

It will figure sizes of pulleys, line shafts, pump jacks, emery wheels, and feed grinds, and assist you with your automobile and tractor troubles.

It will plan labor and home-saving devices for you, furnish aid in farm and household accounting, public statements, make out balance sheets, and do multigraphing and typewriting work.

It will help in planning the interior arrangement and decorating of the home, furnish recipes, menus, health suggestions, dress patterns, and will do hemstitching work.

Your institution wants to be of service to the community.

^{*} *The School Review*, XXIX, 6-7. January, 1921.

Won't you give us a chance? If we can be of assistance in any way write for further information.

One can read between the lines of this invitation to apply for assistance many educational applications of the courses in the school in literature and mathematics, in agriculture, in science, and in home economics. One cannot help realizing also that the conception of education which is expressed in this letter is much broader than that which is in the minds of those who think of the high school as merely an academic institution intended to prepare a small group of students for advanced courses or for professions in the community.

The survey as a basis for planning education. Among the rational bases for determining educational needs, none are more comprehensive and adequate than the local survey. Sometimes local surveys attempt to canvass the entire educational needs of localities—such a survey has been conducted in Elyria, Ohio.¹⁰ Other surveys canvass only certain aspects of educational needs—such a survey is that of Wilmington. The following list of topics from the table of contents of the Wilmington report exemplify the character of an industrial survey:¹¹

Introduction

Delaware

Wilmington

Compulsory attendance legislation

Legislation concerning employment of minors

Enforcement of the child-labor laws

A study of certain groups of public-school pupils

Some facts concerning pupils 13 and 14 years of age

Facts concerning high-school boys and girls

Places of birth

Occupations chosen by high-school pupils

A study of the industries.

Importance and scope

Analysis of principal industries

Lack of uniformity of conditions

¹⁰ Educational Survey of Elyria, Ohio. United States Bureau of Education Bulletin 1918, No. 15.

¹¹ *Industrial Education in Wilmington, Delaware*. United States Bureau of Education Bulletin 1918, No. 25. Table of contents, p. 3.

Young people in the industries

Boys holding street-trades permits

Holders of general employment certificates

Special permit boys and girls

Employed brothers and sisters

Educational needs of workers, and present educational opportunities

Needs expressed by the workers

Educational needs as expressed by employers

Present provisions for industrial education in high schools and private schools

Provisions for industrial education in the industries

Suggestions for a program of industrial education

Essential elements to be provided

Suggestions for industrial education in the schools

Suggested outlines of courses

Time allowance—Special courses

The High School—Evening classes

Suggestions for industrial education in the industries

Summary of suggestions

The opportunity for secondary education depends upon the location of the school. The size of the service area of secondary schools depends upon the transportation facilities of the locality in which the school is situated. The extent of the service rendered by schools in rural and in urban localities is indicated by the excerpts from Hatch and Judd. One of the ways of extending this service area is described by Dick.

INACCESSIBILITY OF SCHOOLS LIMITS ATTENDANCE¹²

BY EUGENE MERRITT AND K. L. HATCH

The value of any educational institution to the masses is directly proportional to its accessibility. . . . A study of the distribution of student attendance reveals the fact that distance from school, good roads, and other means of transportation are important factors in determining the attendance in educational institutions. A comparison of the maps showing distribution of

¹² Agricultural Experiment Station Research Bulletin 40, 1916, Madison, Wisconsin. Pp. 47-48.

students attending (different types of high schools in representative Wisconsin counties) appears to show that type of institution has little effect upon student attendance. . . . Similar studies made by others are corroborative of the conclusion that type of institutions is of far less importance in determining its radius of influence than is its accessibility.

EFFECT OF LOCATION UPON CURRICULUM PURSUED¹³

BY CHARLES H. JUDD

High schools in Cleveland, as in other cities, are largely local in their radius of influence. Every school gets a considerable portion of its students from homes situated near the school. If the city consistently follows a policy of establishing specialized high schools, it is entirely certain that a large number of its young people will receive specialized educations, the nature of which will be determined, not by considerations of individual tastes and abilities, but rather by considerations of the locations of the pupils' homes. This is not sound educational policy.

Cleveland ought not to establish a system of high school education which denies to a large part of the children valuable educational opportunities, because it groups opportunities of one sort in one school, those of another sort in another school, and those of a third sort in a third school, and so on.

SCHOOL CONSOLIDATION¹⁴

BY GEORGE S. DICK

A completely consolidated school in terms of service is a centralized school that brings together not only the children of school age, but also the people of this area. The building is not only a schoolhouse, it is also a community house in all that the two words school and community imply.

As a school it aims to give a twelve years' Course of Study—eight years of elementary work and four years of high school especially suited to the child and youth in a rural environment. This is enjoyed by them without breaking home ties while their real interest and help continues in the farm home.

¹³ *Measuring the Work of the Public Schools*. Russell Sage Foundation, 1916. Pp. 231-232.

¹⁴ *Education in Wisconsin*. Biennial report of State Superintendent of Public Instruction for 1920-1922. Pp. 133-135.

As a community center it aims to give to the people the educational, social, recreational, and economic needs of the community that it attempts to serve. The family is a unit responsible in the main for the education and training of its children. The school is an institution established to supplement the home and the church in this most important of human duties. It is clear that the school must in every way possible strengthen the home for this sacred duty—the planning for and carrying on its part in the child's development toward noble, useful, effective manhood, or beautiful accomplished womanhood. This result is more nearly secured by taking the home with all its interests into the school and naturally the school with all its interests goes into the home. This is illustrated in the proper way of teaching especially the vocational subjects and is seen in all school activities. The consolidated school has succeeded in rendering this service to a marked degree.

There must be taxable property sufficient in the proposed district to support this kind of a school without over-burdening the people with taxation.

There must be people and children enough to classify into this kind of a school, ever remembering the changing rural population.

The larger district must be wisely selected, looking to the best interests, present and future, of the territory and people who are to be left out as well as the territory and people to be taken into the new organization. But little if any attention should be paid to county or township lines. Wise was the action of the state legislature of Nebraska when it ordered the entire state to be districted for consolidated schools. Such a law requires a broad forward planning that renders service to the whole state and prevents failure many times due to more narrow vision and selfish local interests.

The Center, the place for building or buildings, should be as near the geographical center of the district as possible. Sometimes the exact geographical center is not suitable. The lay of the land, hilly or level, lakes and streams, the present roads and the possibility for more and better highways, their direction, whether they are parallel or converging, must all be considered. The natural tendency of the people to be attracted by market, trade, business, post office, store, and boarding places for teachers has its advantages for school and community centers; many of the strongest and best schools have their centers in the open country.

The first consolidated school was organized over fifty years ago in the State of Massachusetts so it is not a new kind of school organization, but a kind that has been tested, tried and found efficient. It is most popular where it is best known. The Bureau of Education, Washington, D. C., two years ago stated that about 2,000,000 children were being transported from 65,000 one room rural schools that had been closed, to 13,000 consolidated schools found in all parts of our country from Connecticut to California, from Northern Minnesota and Northern Michigan to Southern Mississippi and Alabama.

It is difficult to decide which is the leading state in this kind of school service, but nearly if not all state school officials are as strong in its endorsement as is State Superintendent P. E. McClenahan, Des Moines, Iowa, in his statement July 17, 1922: "No consolidated school in Iowa that has been completely organized has ever dissolved or gone back to the old system. The number of consolidated schools has almost doubled here in the last three years. Last year we hauled something over thirty-five thousand children and had a large number of busses and motor transportation. We have very few complaints, and some of the children are hauled as far as eight miles. There is no question but that the consolidated school has been a very wonderful success in Iowa. This is one of the greatest educational movements of the last quarter of a century, and possibly of this whole century." They have had consolidated schools in Iowa for 25 years.

Some parts of Wisconsin are so sparsely settled and some of it on account of topography and low taxing value cannot now and perhaps never can have the advantages of consolidated schools. Three-fourths of the state with her abundant wealth, compact population, excellent roads, and favorable topography can very successfully give to her people and their children a much better public school service through more complete organization.

The interest is moving slowly but there are places of marked success. The largest project is at Institute, seven miles north of Sturgeon Bay in Door County, where after six one-room districts were consolidated a seventh district asked to be taken in. The request was granted making an organization including 53 square miles, or sections, with about 400 children. The fine building now in process of construction at a cost of over \$100,000

is to house kindergarten, grades, and a four year high school. It has every modern equipment found in our best village or city school buildings, and is expected to be ready for occupancy September, 1923. The transportation will be carefully planned and that community far famed for its wonderful Door County cherries will be far famed for one of the most complete consolidated schools in the country although she has strong rivals in North Michigan on the east and North Minnesota on the west.

Elk Mound, Dunn County, a complete consolidated school district of about 20 square miles or sections gives grades and four years of high school, runs seven busses and has been in operation two years. The past winter during cold weather, storms, and deep snow when many of the schools of that county were closed due to the inability of children and teachers to reach their school-houses, the Elk Mound seven busses arrived on time and that school had an average daily attendance of above 95% through the winter months.

Organizing the community to support the school. In order to maintain the proper reciprocal relation between schools and communities, the members of the community must be informed about the school just as the administrators of the school must be cognizant of the needs of the community. In the following article, Reavis outlines a plan which may be found useful in such a campaign as Judd suggests in Chapter I.

ORGANIZED PUBLICITY IN SUPPORT OF SCHOOLS¹⁵

BY W. C. REAVIS

The problem of securing adequate financial support for public schools has become more and more acute with the increasing cost of public education and the enormous expense of financing the building programs required in our rapidly growing municipalities. If funds are to be secured to maintain the schools even at the present level of educational efficiency and to meet the conditions of normal growth, to say nothing about the expansions that should be made in the interests of greater efficiency, better methods of informing the people about their schools must be devised, and a more systematic attempt must be made to create

¹⁵ *The Elementary School Journal*, XXII, 223-227. November, 1921.

a more wholesome public opinion with regard to public education in the local communities where a large part of the school budget is raised.

Outside of the publication of the annual, semi-annual, or occasional school report, which is seldom read by anyone in the community from which it comes, and news "squibs" which from time to time find their way to the columns of the local press, little effort has been put forth by school administrators until very recently consciously to direct the formation of educational opinion in regard to the support of schools.

To leave this important matter largely to chance as has been the case in the past in most localities is a hazard which should no longer be risked. School administrators must seriously accept the responsibility for disseminating the proper educational information and for guiding the development of public opinion along educational lines in the communities which they serve. This will require the mastery of the technique of using to the best advantage the various agencies through which public opinion is aroused. It will require organized and systematic publicity through bulletins, press, platform, and pictures. If these agencies are properly used, public opinion can be molded; but if neglected, a half-informed or mis-informed public opinion will likely result. Moreover, there must be a directing mind back of the publicity all the time if the desired ends are to be attained.

The following account of an organized publicity campaign to create wholesome public opinion for better support of schools is given to illustrate a method by which a community can be quickly led to know and to serve its schools.

The program referred to was carried out during the years 1918-21 in the city of Alton, Illinois, a community of twenty-five thousand people. It became evident early in 1919 that the Board of Education would have to ask for more funds than they were legally empowered to raise by levy if the schools were to go forward in accordance with adopted plans. While it was quite certain from the outset that the necessary funds could be secured by a bare majority in a referendum vote, it was considered good policy to secure approval by the largest possible majority. In other words, it was desired that the educational program of the board should be thought to be so satisfactory by the community that the voters would voluntarily go to the polls and ratify the request for the desired financial support.

A campaign was accordingly planned with the idea of fully

informing the people about their schools. Parent associations in all the school districts of the city were asked to hold public meetings at which the superintendent and members of the Board of Education discussed the educational program of the board and explained the need for greater financial support. Questions were invited, and an earnest attempt was made to arouse favorable public opinion through a clear understanding and realization of the needs of the schools. A full account of each meeting appeared as a front-page news article in the daily press on the ensuing day. The matter was presented to civic organizations, lodges, and clubs, and endorsement was welcomed. The school children likewise were informed concerning school needs and were asked to discuss the question at home. As a result, the board's request for increased school tax was ratified at a special election by a vote that was practically unanimous.

As the building program of the board had been deferred during the war period and came up for urgent solution during the following year, it was decided to organize a systematic publicity campaign in support of schools to continue throughout the year in order to inform the public fully about school-building needs and prepare the way for the approval of the necessary bond issues.

There was plenty of evidence that the school report published annually was not widely read. It was thought that if this report could be brought before a greater number of citizens, it would contribute materially to the purposes of the campaign. It was, therefore, decided that, instead of a printed report, one prepared in graphic form that could be presented from the platform as an illustrated address, conveying the important facts that should be known by the community, would accomplish better results.

The annual report of 1919-20 made use of sixty-five lantern slides and was organized under ten general headings:

- I. Introductory statement (verbal)
- II. Our school plants (fourteen slides)
 1. Map of school district
 2. Photographs of the school buildings
- III. Growth of our schools (five slides)
 1. Growth in school enrollment 1895-1920, and anticipated growth by 1925

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2. Growth of high school 1895-1920, and anticipated growth by 1925
3. Relation of classrooms needed to classrooms provided in the elementary schools
4. Relation of classrooms needed to classrooms provided in the high school
5. Investment in school property per pupil in Alton and in larger cities of Illinois

IV. The organization and administration of schools (five slides)

1. General organization
2. Plan of organization of the high school
3. The articulation of Alton's public schools
4. Where do our teachers come from?
5. Length of teachers' service in Alton

V. Our school population (seven slides)

1. Population under twenty-one years of age in and out of school
2. Relative ages of our pupils under twenty-one years of age
3. Relative ages of pupils attending our public schools
4. Age-grade distribution of our public-school pupils
5. Age distribution of eighth-grade graduates
6. Age distribution of high-school graduates
7. Relative proportion of accelerated, normal, and retarded pupils in our schools

VI. The problem of school attendance (two slides)

1. Why children were kept out of school
2. Attendance by period of days for the 1919-20 term

VII. Health of school children (six slides)

1. Results of medical examination of 535 children in Lincoln, Garfield, and Lovejoy schools
2. Frequency of various physical defects of children in our public schools
3. Monthly exclusions for contagious diseases and on account of temperature
4. Frequency of common contagious diseases in school during 1919-20 term

5. Periods of exclusion from school for the most common contagious diseases
6. Summary of the health work in our schools during the 1919-20 term

VIII. Measuring the results of classroom instruction (four slides)

1. How well do our pupils spell?
2. The rate at which our pupils read
3. The quality of our pupils' reading
4. How our pupils stand in the fundamentals of arithmetic

IX. Illustrations of various school activities (eighteen slides)

X. Cost accounting (four slides)

1. What becomes of your tax dollar?
2. How our school dollar was spent in 1919-20
3. Cost of instruction in the Alton elementary schools
4. Index of schools' efficiency in completing work

The report was used by the superintendent as an illustrated address before local parent associations and church and civic organizations. News articles on the different sections were prepared during the summer of 1919 for the press, and important points were repeated in supplementary articles from time to time during the year when reports of the address were given. A summary of the report was prepared in bulletin form and was given wide distribution after an interest in the content of the report had been aroused.

It is estimated that from twelve to fifteen hundred people saw the slides and heard them discussed by the superintendent and that every reader of the daily press had many opportunities to grasp the important points of the report through the news articles that appeared systematically throughout the year.

The success of the campaign can be judged by the fact that the community, by practically unanimous vote in each election, approved both a \$200,000 bond issue for elementary schools and the organization of a community high-school district which carried with it increased taxation and plans for the erection of a modern high-school building to cost the district approximately one-half million dollars.

In undertaking an organized campaign of the type described,

it should be clearly recognized and understood that the systematic dissemination of information regarding schools not only benefits the public for whom it is intended but also reacts on the superintendent and the board of education by pointing out to them the defects in their own plans. The better and more systematic the publicity, the more critically does it test the correctness of the ideas advanced. Publicity thus becomes a test of the soundness of educational policy as well as the most useful means of realizing it.

Principles of education derived from a study of national and community problems of secondary education. Until the American secondary school has become more fully developed, many of its practices should be regarded as experiments. Many of these experiments are very instructive to teachers as well as to pupils.

National educational needs are best met when education is planned to meet local needs. The survey is a valuable basis for such planning.

The school should offer training in personal initiative and self-control.

The school possesses facilities for providing extra-curricular training in social leadership. The organization of these facilities should be undertaken.

Training for leadership in the community which supports a school as well as for leadership elsewhere is an important function of the school.

A reciprocal relation should exist between school and community—the community supports the school; the school should aid the community.

School teachers are social workers.

Before denying certain privileges to pupils, the school should provide adequate desirable opportunities for pupils to satisfy their legitimate recreational needs.

The secondary school—urban or rural—should bring together not only the school children but also the school patrons.

The type of high school maintained is less important in determining its influence than its accessibility.

The service area of the public secondary school is small.

In attempting to "socialize" pupils for national and com-

munity life, the fact should not be overlooked that basic arts and sciences as well as recreation have values in which pupils can and should be interested. Likewise, school patrons can be "socialized" by the arts and sciences as well as by special recreational features.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Obtain from a high-school pupil a list of the social-laboratory practices which his school has conducted during a single week, or, still better, during a month. Evaluate those practices by means of the principles of this chapter.

2. Try to find out whether or not high-school pupils who participate in such organizations as "girls' leagues" and "high-school boards" maintain high scholastic standards.

3. It is frequently asserted that various forms of pupil-government and pupil-leadership are impractical for the average school. Study the readings of this chapter and make a list of all the plans for activities which you think are practical for most schools and another list of plans or acts which you think are impractical. Defend your classification of plans and activities.

4. What is meant by the term "training of leaders"?

5. Name four population groups or types of occupations for which the training of leaders has been especially neglected.

6. It is frequently alleged that the secondary school prepares pupils only to live in other communities than their own. To what extent is this allegation true?

7. What dangers confront the teacher who aims at the training of pupils for life in only certain types of communities?

8. How can high schools provide applications of their courses to community life without lowering the quality of instruction?

9. Compare the school's facilities as a recreational center with the facilities of other local institutions in the communities with which you are familiar.

10. What justification is there for providing recreation in the school?

11. Formulate a plan by means of which the school can become interesting and profitable for adults.

12. Discuss the parent teachers' club as a help or as a hindrance to the secondary school.

13. What is a community survey? To what extent can secondary education be planned in accordance with the results of a community survey?

14. If the results of a community survey were taken seriously, what changes, if any, would you expect in the high school which you attended?

15. To what extent are there geographical limitations of high school privileges?

16. To what extent do the secondary schools as now distributed in your county meet the county's need for secondary education?

17. Prominent writers have admitted that the school can largely control public opinion. To what extent, and under what conditions ought the school to accept this responsibility? How, if at all, can the school avoid this responsibility?

18. Evaluate the principles at the end of this chapter.

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PART II

THE SECONDARY SCHOOL TEACHER

CHAPTER IV

TEACHING AS A PROFESSION

Members of the profession. The direct leadership of nearly three millions of America's most promising youth is a part of the service for which America's secondary school teachers enlist. The teachers who thus become the nation's pilots are schooled, counseled, and experienced in the best institutions that America can provide. They enter the fascinating service of teaching with a clear recognition of certain responsibilities which loom greater and greater as the far-reaching consequences of the teacher's irresistible influence are revealed. These clear-headed frontiersmen and frontierswomen of civilization are the members of the profession of which this chapter treats.

The same leaders can be found in many enterprises in addition to those which are avowedly educational. They participate in civic activities in which trained and zealous guidance are required. They exert great power in the attaining of the highest objectives of their communities. They engage in and often direct the highest forms of social activities their cities can provide. It is of such trained professional men and women that this chapter treats, and not of the transients who often employ teaching as a stepping-stone to some occupation no more worthy than teaching, or of the parasites who sap the profession of teaching and stifle the enthusiasm and mental energy of the youth whom they essay to inspire and enlighten.

Professionalism among teachers. The following article by

Professor Smith sets up criteria by means of which the degree of professionalism among individual teachers as well as among teachers as a whole can be judged.

THE PROFESSIONAL STATUS OF TEACHING¹

BY WALTER R. SMITH

Is teaching really a profession? How shall we know whether or not it is a profession? If it is not now a profession, how can it be made so? These and similar questions are continually recurring and various discussions of them are accessible. Most of these discussions, however, are either inconclusive or unconvincing. In some cases the analysis is incomplete, leaving too narrow a basis for judgment, while in others the conclusions are too sweeping. Education is such a complex process, schools are so varied in type, and teaching personnel is so fluctuating that any wide generalization is misleading.

Most efforts to distinguish the professions from other vocations fail because of a faulty approach to the subject. Professor Palmer's delightful essay, "Trades and Professions," errs because his basis of distinction is wholly psychological. According to his analysis professionalism is an attitude of mind. Thus the determination of whether or not one's occupation is a trade or a profession depends upon his attitude toward his work. Such an idea may be poetic and appealing, but it is neither scientific nor wholly true. No exaltation of mind can make the ditch digger, hardware merchant, or coal miner a professional man. Psychological elements must be taken into account, but, at bottom, the whole question is a sociological one. For purposes of differentiation of occupation, one's attitude toward his own work is scarcely so important as the attitude of the public toward that work; and the attitude of the public is made up of tradition, popular usage of terms, and opinions based upon vague analyses of the distinctive nature of the services rendered.

If society, rather than the individual, determines whether or not one's occupation is a profession, our first task is to orient and clarify the standards of judgment it uses. A careful analysis, it seems to me, will indicate that the public expects an occupation to measure up to four requirements before it can be dignified by the title of profession. These are: 1. It must render

¹*Educational Review*, LXIII, 35-49. January, 1922.

a high and specialized type of social service. 2. Its personnel must have specialized and abundant training for its work and be comparatively permanent. 3. It must provide sufficient income to enable its members to maintain a cultural standard of living. 4. Its members must be dominated by a professional spirit. Each of these requirements must be explained and applied before we can define the professional status of the teacher.

In regard to the first it may be stated that every recognized profession renders a specialized service that is of a highly social nature. All useful work produces, in varying degrees, a social result. The railroad section hand, the carpenter, the farmer, the grocer, the manufacturer, each contributes to social welfare; but we ordinarily think of their contributions as less highly socialized and made to individual persons rather than to the community. A carpenter, for example, may build good houses; but a professional architect may do more than design superior houses—he may revolutionize the architectural taste of a community. The grocer may aid or injure the health of a neighborhood, but not to the same extent as the physician. The public expects the professional man to have a social outlook and places upon him a responsibility for community welfare not demanded of the tradesman or business man.

The high social status of professional service is exemplified in a number of ways. Most patent of these is in the relation of the economic reward to the amount of services rendered. In the trades or business the amounts of service, or of commodities to be delivered, are fixed and calculable. They are therefore subject to bargain and contrast, so much service or so many commodities for a certain amount of money. In the professions, however, the services are largely qualitative. We do not stipulate the amount of service a minister is to render for a fifteen hundred dollar salary or the physician for a five dollar visit. They are "called" with the hope that they will accomplish certain results. If they fail, or accomplish more than expected, the pay remains the same, except for the esteem in which they are held, and the future relationships this may establish. The result of these differing methods of determining values is that while business services are limited quantitatively, professional services are unlimited except in quality, the professional man doing his best at all times whether the pay is much, or little, or even nothing.

Another feature of professional rewards is that they are very largely socially determined. Trade and business relationships are mainly individual; professional relationships generally have a public element in them. Physicians' fees are largely standardized and pro-rated on a social basis. Ministers' and teachers' salaries are fixed by some sort of group action, and lawyers and engineers' fees tend to become standardized. They thus crystallize into social tradition and any change becomes a matter of social concern. The result of fixing rewards through social appreciation is to make the professional man more socially minded. Being more nearly a public servant he accepts social responsibility and has a larger vocational interest in public welfare. This tends to stimulate a professional attitude, which requires all members of a profession to democratize their services by aiding the needy regardless of their social or economic standing.

The second requirement of a profession is that its personnel must have specialized and abundant training and be comparatively permanent. Throughout history professional services have been so highly differentiated that anyone offering them was expected to have undergone a long period of training for his work, either individual, tutorial, or collegiate. In our present complex society most effective work is specialized; but, in non-professional occupations, the amount of skill is generally so limited, or the division of labor so minute, that the specialized training required may be abbreviated. A finished tradesman undergoes an apprenticeship and a business man needs experience; but during apprenticeship, or business training, the novice is doing regular work, for most of which he receives pay. The professional man, however, must undergo long periods of study and expense in preparation for his initial practice. In the best established professions, such as law and medicine, the young practitioner must, in addition, pass through a "starving period" before he can expect any large financial rewards.

This prolonged period of technical preparation tends to establish a permanence of personnel in the professions. Intense special training lowers one's adaptability, and, to some extent, unfits him for ready transfer of interest and skill. Since preparation for business and the trades is more general, the process of adjustment to a new occupation is less difficult than it is for the more minutely trained professional man. Also the investment of time and money in professional preparation is so extensive that few will make it unless they are sure of themselves. Still

another element preventing change in professional work is the fact that the larger incomes only follow long experience in which special ability is demonstrated.

The third requirement of a profession calls for but brief mention. No occupation that does not provide a sufficient income to enable its followers to maintain a respectable plane of living can hope to attain professional rating. A professional man is expected to dress well, to live in comfortable quarters, to surround himself with such evidence of culture as books and magazines, and to contribute reasonably to social and civic enterprises. His family is also expected to have cultural advantages and to exemplify certain elements of taste and respectability. So insistently does public opinion demand these things that professional success is difficult to attain without them, and any profession permitting its standard of income to fall below a reasonable minimum will lose in dignity and popular esteem.

The final test of a profession is whether or not its members are dominated by what is generally known as a "professional spirit." This spirit is compounded of a number of elements. Prominent among these is a prideful class consciousness. The genuine professional man is conscious of the superior value of his services and takes pride in his own work and that of his fellows. He is interested in maintaining high standards of professional attainment and is willing to organize to promote professional ideals. For this purpose he is willing to submit to a certain amount of class control and public regulations. Physicians, ministers, and lawyers have led in raising standards of professional education and eliminating quacks and fraudulent practices in their own fields where the intangible nature of the services rendered makes popular judgment uncertain.

In this struggle each profession gradually builds up a class ethics. Some sort of occupational urge leads professional men to perform much service for which they do not expect pay. Blatant advertising is forbidden and competition is kept on a high plane. Definite efforts are being made by trade unions and many business vocations to develop class consciousness and an occupational ethics, but the professions remain preeminent in the success they have attained. The "professional spirit" is elusive and intangible, but it is a powerful force that the public vaguely, though universally, recognizes.

Each of these four standards of judging professional standing presents difficulties in application. Every well established vo-

cation shows some degree of advancement along one or more, or perhaps all, of these lines. As an economic society matures there is a tendency to different vocations so fully that many of them will approach a professional status. Under all circumstances, however, there will be a quantitative grading and some qualitative differences.

In our present American society medicine, law, and the ministry are universally recognized as being fully professionalized. The higher realms of the fine arts—music, literature, painting, sculpture, architecture, and the drama—may also be said to have attained complete professionalization. Engineering, dentistry, and journalism are border line vocations rapidly approaching the above standards and securing public recognition. Even such businesses as that of the banker, broker, and economic adviser are meeting many of the tests and gaining in popular esteem. Likewise nurses, philanthropic and social workers, and personnel experts in the industries are specializing upon such a high social and cultural plan as to approach professional attitudes.

Each of these border line vocations falls short in some particular, however. Engineering provides abundant specialized training, but falls short in standardization of service, permanency of personnel, and the professional spirit. Dentistry begins its training on too low an educational plane, and, as generally practiced, depends too much upon artisanship rather than professional diagnosis to fully meet the standards of a critical public. Journalism has not entirely changed from apprenticeship training into educational preparation, but is rapidly doing so and will then be ready for professional rating. The border line businesses, such as banking, still depend too much upon experience instead of intellectual training for promotions and fall short of a genuine professional attitude toward social welfare. Nurses, social workers, and personnel experts are deficient either in preliminary training or the standardization of their work. Thus we might go through the whole list of vocations and show where they fail to meet one or more of the standards outlined above as being necessary to gain professional rating.

What, then, may we say of teaching? How fully does it meet the tests we have elaborated? For answer let us apply them in some detail. At the top of the scale come teachers of the university and college type. They probably meet each of the tests as well as any group of men, and have, for generations, been given professional rating along with ministers, lawyers, and phy-

sicians. A certain amount of justifiable criticism is leveled at them because so few of them take any preliminary training in the technical phases of teaching; but, since so large a share of their rating is traditionally and practically given because they are professional scholars, for which they receive unusually elaborate training, their weakness in preparation for classroom teaching does not undermine their professional standing. As schools of education are being established in all universities, this shortcoming will be remedied, and as professional organization improves class consciousness and class ethics, they may be expected to head the whole list in professional respectability.

The second rank of teachers is composed of educational administrators. As education is everywhere made more of a public concern, it tends to become the most important function of government. Already much the largest local and state budgets are for education and more and more public opinion is likely to demand that school funds be administered by professionally trained men. This is evident in the rapidly rising salaries of state, county, and city superintendents, and of high school and grade principals. It is also evident in the differentiation of the curricula in schools of education. Teacher training is separated into departmental groups, in one of which administrators are given elaborate and specialized training. At the same time group organizations of administrators are building up class consciousness and developing a professional ethics. A complete analysis would indicate that educational administration should be classified as a border line occupation rapidly becoming fully professionalized.

The third teaching group is composed of the great body of high school and grade teachers in well organized school systems. They should probably be classed as lower border line professionals, ranking beneath the administrators and still far from meeting reasonable professional standards. In fact, they satisfy only the first of the four requirements. That they render a high type of social service is scarcely open to question. The pulpit, press, and platform resound with praises of their unselfish devotion to ideals and the constructive nature of their civic mission; but this praise sometimes approaches pure buncombe, when we analyze the psychic attitude dealers in such persiflage hold toward public school teachers as a class and the opposition they show to movements devised to elevate teaching standards.

With reference to the second requirement, it may be stated that most teachers in the class under consideration have a cer-

tain amount of technical training, but in many cases it is very limited. Moreover, their general education is not sufficient, as in the case of college and university teachers, to offset their weakness in technical preparation. Coffman, in his study of the teaching population made a decade ago, found that the typical teacher had had only four years of educative training above the elementary school. While it is considerably more than that in the best school systems, it is still too low to permit serious claims to professional rating. Even more significant is the shifting personnel of teaching. Coffman found that the median number of years in service was seven for men and four for women. Assuming that length of service is much greater in well organized systems, the continued dropping out of experienced teachers and the addition of novices to take their places undermines any sort of stability of vocational personnel.

Not less important in the social rating of teachers is the plane of living their salaries enable them to maintain. In 1910-11, according to a survey by the United States Bureau of Education, the average salary was \$542 for men and \$420 for women. Such an income could scarcely be expected to provide the cultural surroundings, or the dignity, freedom, and vocational pride we demand of professional people. Since that time salaries have advanced, but not in proportion to the increase in the cost of living; in reality, war time unsettlement and inflation of commodity values almost forced the teacher below the poverty line. Until the economic rewards of the ordinary teacher are considerably increased, he will not rise above the contempt of the commercial classes or maintain the standard of living necessary to general social respect.

Concerning the last requirement, that of a professional spirit, the rank and file of teachers are also wanting. Teaching is so easily entered and retired from, salaries increase so slowly, and public esteem is so grudgingly granted that few teachers begin their work with the idea of making it a lifetime occupation. Hence they are slow to organize, to cultivate fellow feeling, and to sacrifice personal preferences for group welfare. This makes class consciousness and a vocational ethics difficult to bring about. In our larger cities militant organizations are being perfected that are able to force teacher loyalty and public recognition; but the struggle to attain a professional spirit will be long and hard under the most favorable conditions, and our smaller cities and towns have scarcely started.

If the better class of public school teachers above considered fall short of professionalism at present, and may be expected to for some time to come, it may be questioned whether or not rural and village teachers will ever attain it. Progress in that direction at present is certainly slow, but there are evidences that it exists. The most patent direction of this progress is in raising the legal requirements for a certificate to teach. Many states now require four years of preliminary education above the elementary school and provide a special normal training course for those expecting to teach. As these general requirements are advanced, the ranks of beginners will be thinned, increased wages will raise the standards of living, and more effective organization will improve the professional spirit.

A general perspective of the vocational status of teaching will show that university and college teachers are now classed as professionals, superintendents and principals are on the upper border line fast gaining professional recognition, high school and grade teachers in our best public school systems are on the lower border line, slowly but surely advancing into professional ranks, and rural and village teachers are still far removed from any professional considerations. It now remains to point out some of the evidences of progress at hand and certain other steps necessary to be taken before public school teaching can be fully professionalized.

With reference to the first professional requirement, that of rendering a high type of social service, public school teaching shows but one weakness. For those deliberately choosing to teach because they love it and are willing to accept its responsibilities, it stimulates the necessary social outlook and offers wide opportunities of service; but there are at present, even in our best schools, too many floaters who invest little idealism in their work and get little inspiration from it. As long as teaching is allowed to be exploited by women to decorate the portals of matrimony with superfluous finery, and by men to tide over a period of vocational indecision or get ready cash to pay for a more respectable professional education, it will be difficult for teachers to convince a lethargic public of their professional zeal and community interest. Until teachers can purge their rolls of these perfunctory time servers, they will not be able to maintain the high level of social service that should characterize a genuine profession. Means of doing this will be suggested later.

Toward meeting the second requirement much progress is

everywhere visible. University and college schools of education are spreading. State normal schools are being multiplied, attendance is increasing, and the amount of training offered is being extended to include four full years of work. The larger cities are likewise supporting normal schools to train teachers to fill up their own ranks. Summer schools and extension work of various kinds are raising the educational standards of teachers in service. In addition, the high schools are in many states providing specialized courses for training rural and village teachers. Reading circles, special supervisors, and institutes are adding a modicum of technical stimulus to those already at work. In many cities of very moderate size apprentice teaching is directed and required before the novice is given a regular position. Taken altogether, these and other agencies are rapidly guaranteeing that all teachers in our better school systems shall have a reasonable amount of both general education and technical preparation for their work and that rural and village teachers shall have an increasing amount of preliminary training. What is most needed to advance these agencies is an educated public opinion that will not countenance the employment of untrained teachers and more stringent state laws and local board regulations concerning the preparation required of applicants for positions.

With reference to permanence of personnel the situation is less hopeful. If teaching continues to become more definitely feminized, our social *mores* concerning marriage and the employment of married women must change. So long as a large majority of women begin teaching with the idea of temporary service, the personnel of elementary teaching must remain fluctuating and peripatetic. What is true for a large proportion of women is just as true for that large majority of men who plan to teach for a short time only. In either case the average length of service can be increased by raising the entrance requirements, both in the amount and the technical nature of the education demanded, and by the establishment of salary schedules cutting down the amount of initial salary obtainable. Each of these movements is gaining rapid headway in the cities, but is moving more slowly in the smaller towns and rural districts.

Another element leading to a fleeting personnel is the peculiar nature of teaching tenure. At present most ordinary teachers accept a one year contract, which automatically discharges them at the close of the year. They must then reapply or search elsewhere for a position. Such a method of tenure forces the teacher

to assume the whole burden of terminating employment, which in business and well established professions is shared by the employer. This keeps the teacher in unstable equilibrium with reference to his future, and prevents him from becoming a full-fledged member of the community. With such an insecure tenure, the teacher inevitably becomes oversensitive to public criticism and loses his birthright of independence in trying to satisfy the whims of patrons. Not until the present unfair type of contract, which is not merely temporary but often prescribes the sort of conduct the teacher is to exemplify, is eliminated in favor of the indefinite tenure now used in colleges and universities, can teachers hope to attain the dignity, independence, and permanence of employment necessary to professional self-respect.

The third professional requirement, that of a cultural standard of living, is closely allied to the second. So long as any drifting youth or unsettled maid with a little education is allowed to teach, and so long as initial salaries are comparatively high and increases for experience and advanced training are slight, the income from teaching must remain small. Competition is scarcely less dominant in professional than in business life, and, in the long run, salaries will be determined by the laws of supply and demand. An overabundance of commodities lowers prices and just as inevitably an overabundance of teachers lowers salaries. It is idle to talk of raising the wage scale without creating scarcity of qualified applicants for positions. The only hope of increasing the economic rewards of educational work to the point where they will permit the dignified plane of living necessary to the social respect due a profession, is to make it unprofitable for those who now exploit it. This desideratum may be approached in a number of ways. The first of these is by raising the entrance requirements. More careful selection of entrants will come largely through legislative control of licenses to teach. Public sentiment must be educated to the point of insistence that the teachers of our youth shall be relatively mature men and women who are technically and abundantly prepared for their work. Certificates must be denied those who will not take adequate training or who are personally unfit. Teacher-training schools and state boards of education, who ought to be interested in advancing standards, cannot be altogether absolved from blame in certificating many that are known to be unworthy. By reason of personal sensitiveness, sympathy, and a certain lack of militancy that seems to characterize educational officers, even

the mild legal requirements for certificates are not rigidly enforced. An aggressive policy on the part of teachers' organizations might contribute much to bring about a more rigid selection of those entering the teaching vocation.

Along with more stringent control of certification must come the general establishment of a novitiate, or "starving period," for beginners comparable to that which lawyers and physicians must undergo. Viewed from the economic standpoint, it must be admitted that the mounting cost of public education is somewhat alarming to the tax payer. School taxes are already high and they must increase immensely under the democratic demand of equal educational opportunities for all. For example, statistics indicate that, for the country as a whole, our present high school facilities must be multiplied by not less than six before we can get as large a proportion of our children through the high school as we now get through the elementary grades. Under the stress of meeting the enormous expenditure necessary for enlarging school plants, should we marvel that boards of education not infrequently pare down the salary fund in favor of the building fund? If the salary fund is kept low, however, someone must suffer. Economies will be effected either at the expense of beginners or of the confirmed and experienced teachers. If school-boards use business methods, as the public expects them to do, the only practicable method of substantially raising the salaries of permanent teachers is to eliminate competition on comparatively equal terms of the temporary teaching classes. A critical analysis will show that the income of the floater and time server is really taken from the later salaries of the professional teacher.

It then becomes a matter of vital importance for teachers' organizations and administrative officers to carry on an aggressive campaign for salary schedules that will favor the experienced teachers as against the beginner. Already salary schedules are being adopted in many cities requiring apprentice teaching and fixing low initial salaries, which are to be increased through a long series of years. Similar schedules should be worked out for rural counties and small towns. Where apprentice teaching is impossible, the first year's salary should probably not exceed half that of the third year and should advance steadily thereafter. To avoid mere seniority promotion, which characterizes so many civil service agencies, and is not wholly unknown in city school systems, salary increases should be based upon special merit and advanced training, as well as length of service. War time and

reconstruction scarcity of teachers demonstrated what effect on salaries we may expect to follow the lowering of competitive pressure for positions. If, by raising standards and establishing scientific salary schedules, we can permanently equalize demand and supply, we may be assured of increasing the teacher's income enough to enable him to maintain a respectable professional plane of living.

Our final test of the vocational status of teachers is whether or not they possess what is known as a "professional spirit." While this requirement is closely allied with the others, it implies something additional. The writer had a friend who taught school for a number of years, was then admitted to the bar, and became probate judge for a short time. He did not resume the practice of law, but it is significant that during the remainder of his life he proudly retained the title of "judge." Neither he nor his neighbors referred with special pride to the fact that he had been a school teacher. Most readers can cite similar instances. The questions at stake are, do teachers possess a class consciousness that will lead them to sacrifice self-interests? Can they organize effectively? Have they developed a professional ethics? It is to be feared that, for the rank and file of public school teachers, these questions must be answered in the negative. Yet along each of these lines enough progress is visible to inspire confident hope.

The greatest handicap to the growth of a professional spirit lies in the temporary nature of teaching tenure and personnel. As preliminary training is increased, however, and as apprentice teaching is extended and low initial salaries are fixed, the weeding out of vocational parasites will be more effective. This will leave only those who are permanent enough to feel the need of cooperation. If one's life plans are involved, a sacrificial and compromising spirit can be shown to be worth while. Therefore, as continuity of service is established, a better foundation will exist on which to build a constructive program of professional advancement.

Of prime importance in this program is the perfecting of virile teachers' organizations. These organizations must be exclusive enough to keep out insincere time-servers and they must cultivate sufficient aggressiveness to make their influence felt by legislatures, boards of education, and the public. While avoiding vocational selfishness, they must insist upon fair treatment of individual teachers, scientific salary schedules, and organizational

respect, as well as carry on campaigns for higher teaching standards and general educational welfare. Such organizations are being promoted among college professors and in our larger cities. They need to be extended into our smaller cities, towns, and villages as a basis for effective county, state, and national associations.

If aggressive teachers' organizations can be established, the development of a professional ethics will speedily follow. In recent years several committees have tentatively formulated the principles that ought to govern teachers in their relations to each other and to the public. Means are suggested for keeping competition on a higher plane, for improving the inequitable contract now so prevalent, and for the cultivation of a social attitude that will relieve the necessity of catering to the whims of patrons and the prejudices of boards of education. If these things can be accomplished and an income obtained that will permit a higher plane of living, teachers will gain in self-respect and public esteem. A vocational pride, which is the essence of the professional spirit, will thus be engendered, and teachers will demand and receive the dignified social position that must characterize a true profession.

Salaries and tenure. Improvident though the proverbial teacher may be, few questions have greater perennial cogency with teachers than questions relating to salaries and tenure of position. The following passages indicate present-day conditions and tendencies.

SALARY OUTLOOK FOR HIGH-SCHOOL TEACHERS²

BY H. R. BONNER

To choose a life-career intelligently three important factors about the vocation itself demand consideration—the preparation required for admission, the remuneration granted to the inexperienced, and future salary assurances. As two-thirds of all high-school teachers now hold degrees and since nearly all beginning high-school teachers are required to hold a baccalaureate degree, the first factor may be summarily disposed of as being known. This discussion deals with the analysis of the other two factors.

²*The School Review*, XXX, 414-423. June, 1922. Abridged.

High-school teaching as a career. There is some doubt as to whether high-school teaching should be called a life-career. In Bulletin No. 50, 1921, of the Bureau of Education, it is shown that the "average" (median) high-school teacher has had only six years of experience. It does not follow, however, that teachers enter this branch of professional service for only six years. The rapid expansion of high-school enrolment, at the rate of 8 per cent per year, calls for an increasingly larger proportion of inexperienced teachers annually to care for the increase in attendance. If the enrolment remained constant, the average experience of high-school teachers would be about eleven years. A calling which holds its employees for so short a time can scarcely be called a life-career. With the advent of higher salaries the profession promises to become more attractive, and the period of service will undoubtedly be much longer.

Entrance salary. . . . The average teacher now enters the profession at an annual salary of \$1,297 or a little more than \$100 per month the year round. The entrance salary for men averages \$1,572 and that for women, \$1,184. Thus it is seen that beginning men teachers are paid \$388 more than women. It should not be inferred that all beginners are equally paid. The entrance salaries vary considerably in the different states. For example, in Florida the beginner's salary is only \$960, whereas in California the corresponding average is \$1,886, or about twice as much. The salaries of beginning men teachers range from \$1,289 in Missouri to \$2,154 in California, and the corresponding averages for women teachers vary from \$835 in Virginia to \$1,760 in California. With such inequalities as these, there is great danger that the states paying the higher salaries will attract the better college graduates, while the states paying the lower salaries will be obliged to employ teachers of inferior native ability and of more limited training.

Outlook for the average teacher. The average salary of 69,358 high-school teachers was found to be \$1,678 in 1921. This average is only \$381, or 29.4 per cent, more than the average salary for beginners. The salary outlook for the average teacher, therefore, is less than a 30 per cent increase. It should be borne in mind that the average outlook does not represent the salary assurance for every teacher in the profession. Men and women of unusual ability will excel this average even to the extent of being advanced to the more remunerative administrative positions, while those of inferior ability may fall short of the aver-

age expectation. The corresponding outlook for men teachers is 29.3 per cent and that for women teachers, 27.0 per cent. A profession that promises such a meager assurance is not far superior to a "blind-alley" job. The slightly higher percentage for men may be influenced by the reaction to check the decreasing proportion of men teachers. The fact that men are now paid \$529 more per year than women undoubtedly shows that men's services are at a premium.

The salary outlook for the average teacher varies considerably in the different states. For instance, in Delaware the assurance is for an increase of only 7.8 per cent; in New York, 64.6 per cent. These extremes are unquestionably influenced by the longer period of service in New York than in Delaware. In the report referred to it is found that 64.3 per cent of the teachers in New York state have had over five years' experience, whereas the corresponding proportion in Delaware with such experience is only 35.8 per cent.

Outlook for teachers with over five years' experience. As many high-school teachers drop out of the profession before the end of the fifth year, the salary outlook for those who remain is much larger than has been indicated. It is found that the outlook for the teacher who remains longer than five years is for an increase of \$646, or 49.8 per cent above the entrance salary. The corresponding assurance for men is \$676, or 43.0 per cent, and for women \$571, or 48.2 per cent. The promise, therefore, for a long period of service is more favorable to the women than to the men. In other words, there is a greater initial inducement for men than for women to enter the profession, but a slightly greater percentage of increase is promised to women than to men for a long period of service.

Premium paid to beginners. To induce young men and women to enter the high-school teaching profession during the unusual period of the war it was thought necessary to increase the salaries of beginning teachers at a more rapid rate than the salaries of other teachers. Thus, the salaries of all teachers were increased only 52.6 per cent from 1918 to 1921, whereas the salaries of beginners were raised 60.9 per cent, or 15.8 per cent more. In short, beginners were at a premium of 15.8 per cent. In ten states, however, beginners were at a discount; that is, their salaries were not raised at as rapid a rate as the salaries of other teachers. The premium on beginners reached a maximum of 87.8 per cent in Connecticut, and the discount was greatest

in Delaware where the percentage of increase was 43.9 per cent less than that for all teachers combined. Undoubtedly, in states in which beginners were at a discount an unusual attempt was made to retain teachers already in the service. On the other hand, the premium probably indicates an inability to recruit teachers in sufficient numbers to maintain the necessary corps of instructors.

This premium-and-discount theory has a direct bearing on the salary outlook for teachers. In states granting a premium to beginning teachers the salary outlook is not so favorable as it would have been had all salaries, regardless of experience, been increased at the same rate. On the other hand, in states showing a discount on beginners the figures indicating the salary expectation are relatively large. Thus the salary outlook for Connecticut of 27.8 per cent for all teachers is lower than it should be since the salaries of beginners were unusually increased in the three-year period (87.8 per cent over the average rate). At the other extreme, it must be inferred that the low salary outlook of 7.8 per cent for Delaware is larger than it should be since the salaries of teachers in service were increased more rapidly than those of beginning teachers. In other words, Delaware probably has no adequate schedule, either specifically adopted or implied.

The average premium paid for beginning high-school teachers above the average percentage of increase for teachers with over five years' experience is even greater than the premium based on the average percentage of increase for all teachers. . . . In other words, beginning teachers were granted a percentage of increase 21 per cent greater than that given to teachers with over five years' experience. This practice, as shown in the bulletin referred to, has resulted in a decrease of 2.5 per cent in the proportion of teachers with over five years' experience from 1918 to 1921. This exodus of experienced teachers from the profession indicates deterioration in our high-school teaching staff. Again, Connecticut and Delaware exhibit extreme conditions. In the former state beginning teachers received a percentage of increase 119.1 per cent greater than that given to teachers with five years' experience. In the latter state beginning teachers were awarded a percentage of increase 49.9 per cent less than that given to teachers with five years' experience. Beginners in Delaware were at a discount of almost 50 per cent in 1921.

Conclusions. On each count there is sufficient evidence to show that beginning teachers were much in demand in 1921 and

that more experienced teachers did not receive the consideration shown to inexperienced teachers. Boards of education probably found that it was easier to hold in the profession teachers who had already enlisted than to induce college graduates to enter it. The situation reveals an unfairness exercised toward experienced teachers.

The report shows that an attempt seems to have been made to offset in part the increasing cost of living by adding a bonus to pre-war salaries—a tendency operating in favor of the beginning teacher. The average absolute increase for the United States from 1918 to 1921 was \$578, varying from \$315 in Florida to \$729 in South Dakota. For beginners the bonus was \$571 for men, \$444 for women, and \$491 for both. For teachers with over five years' experience it was \$725 for men, \$611 for women, and \$643 for both. These bonuses were not sufficient until May, 1921, to meet the increased cost of living and did not meet it until it began to drop. The inadequacy of these increments resulted in a loss of college graduates amounting to 9 per cent, an increase of 17 per cent in the proportion of normal-school graduates, and an increase of 37 per cent in the proportion of non-graduates. Thus it is seen that inadequate pay and promise-to-pay resulted in a deterioration which will require many years to counteract. If present salary schedules remain as they are, there will be little inducement for young men and women of ability to remain in the profession. The result will be an ever-shifting teaching staff, and higher educational institutions will be called upon to supply an extraordinary number of high-school teachers each year to take the place of those who discover that the profession offers little financial inducement. It would seem, therefore, in view of these disclosures, that high schools are called upon to adopt salary schedules that will recognize and reward meritorious service and experience in this branch of professional service. The salaries of experienced teachers will need to be increased. A vocation that promises no greater reward than 29.3 per cent for the average employee or 49.8 per cent for those who pass the five-year mark is not likely to result in a contented personnel and will probably not succeed in holding the services of its most capable employees.

TENURE OF HIGH-SCHOOL TEACHERS ^a

BY C. J. ANDERSON

Some permanency of tenure is essential if a progressive policy in high-school instruction is to be realized. How long do the teachers in our high schools remain in the same community? The statistics show them to be an itinerant group. The size of the schools appears to make but little difference to them until they are employed in schools having over ten teachers. In these schools they are content to remain another year.

In the two-teacher schools over one-half of the teachers are new each second year. Only 3.3 per cent of them have remained five years or over. None have remained in the same school more than six years. In the schools employing three teachers almost 60 per cent of the teachers leave by the end of the second year. Only four teachers have taught in the same school for more than six years. The same story may be told for each group of schools with slight variations here and there. Taking the state as a whole, 5.4 per cent of the teachers are new to their present positions; about 39 per cent have returned to their communities for the second consecutive year. The median for the state is three years, made possible by the greater degree of permanency of position in those schools employing more than ten teachers. The median for those schools employing less than ten teachers is two years.

This is a situation that merits the serious attention of those who plan school policies. Teachers should be retained in the same communities for longer periods. Their restlessness is no doubt due in some measure to the fact that in any given school they reach the maximum of the salary schedule in a relatively short time. In fact they reach the maximum in salary much earlier than they reach the maximum in efficiency. Schedules should provide for smaller increases during the apprenticeship period and service and efficiency should be recognized in a monetary way. Statutes providing for permanency of tenure after a probationary period would assist in stabilizing these positions. This has followed in those cities which place their teachers under permanent tenure.

^a *The Status of Teachers in Wisconsin*. Department of Public Instruction, Madison, Wisconsin. 1922. Pp. 107-109.

PRINCIPLES UNDERLYING TEACHER TENURE LAWS⁴

With the growth of teacher organizations and the study by teachers of such professional questions as those of salary, pensions, and tenure, has come a more careful consideration of the underlying principles of all such legislation. There have been several recent studies of tenure principles. The following formulation, that of Ira Richardson, of the University of Oregon (slightly modified from the original) appears to represent with fair accuracy the conclusions of most of the recent studies of tenure:

I. Principles which should be present and operative prior to the institution of tenure laws:

1. Since education is a State function, a prerequisite training for teaching and a probationary period of service prior to permanent certification should be required by State law.

2. The State should prescribe a minimum salary schedule accompanying stages of probationary service based on scholastic and professional training.

3. Details of salary schedule, bases of promotion or demotion to or from grades or levels of salary schedule, ratings and measures of professional improvement following probationary service may be left to local authorities.

II. Principles which should control in the framing and operation of tenure laws:

1. All tenure laws should be associated with regulations governing training, certification, remuneration, and annuities or pensions.

2. Tenure laws should be devised and administered in the interest of better instruction for children and as a stimulus to better preparation and more efficient service on the part of teachers.

3. Participation in the benefits of a tenure law should be based on—

a. Evidence of a satisfactory preliminary training and service as shown by legal credentials of scholarship and professional training and of certification.

⁴From the Report of the Committee on Tenure, Harlan Updegraff, Chairman. Addresses and Proceedings of the National Education Association, LXI, 373-4. 1923.

- b. Evidence of ability as shown by ratings.
- c. Evidence of professional spirit as shown by professional activity and continued study.
4. Dismissal from service should be based on clearly demonstrable causes.
5. Suitable provision should be made for those already in service without preliminary qualifications.
6. All groups and classes of public education workers should be provided for.

Professional standards of teachers. Indications that teachers are taking their tasks seriously are found in the formulations which they themselves are making of teachers' rights and duties. The passages which follow evidence a growth of class consciousness and also show the rise of a spirit of professionalism which is in harmony with the criteria already set up by Professor Smith.

ETHICAL STANDARDS OF THE TEACHER ⁵

BY W. L. ETTINGER

Is it not significant that recently we find bodies of teachers in Massachusetts, Pennsylvania, Ohio, Iowa, and Mississippi discussing and adopting codes of professional ethics? Such deliberations and acts are indicative of the fact that the teaching profession is attaining a maturity—an adolescence, as it were—that inspires a reflective attitude which, in turn, leads to a discussion and formulation of standards of behavior consonant with the dignity of the service which teachers render the community.

What are such codes of ethics? I presume we may define them as a formulation of the ideal relationships that should exist between the teacher and the agencies and the persons with whom he comes in contact, such as the community, his fellow-teachers, his pupils, and those in parental or custodial relation to the pupils.

Where, you may ask, should we look for the origin of such codes? In order to have vitality and significance, such codes must find their origin, their growth and their formulation in the teaching body and therefore should not be imposed upon teachers either from without or from above. They are meaningless, insofar

⁵ *School and Society*, XVIII, 568-572. 1923.

as they are imposed upon teachers; they are vital and controlling insofar as they reflect a sensitive and enlightened professional conscience.

When codes of ethics originate in the teaching body they are accepted by teachers as a guide to a type of professional attitude and behavior which commands the respect and admiration of all.

Do not assume that either in a Pickwickian or a Pecksniffian sense I am about to impose a code upon you. I understand that a representative committee of the New York City Principals' Association is engaged in studying and formulating a code and has already made a tentative report. I have no desire to enter into competition with such an admirable committee, but in response to your request I will sketch certain general considerations which appeal to me as ones that ought to constitute the minimum features of such a code.

Relationship to the community. What obligation does the teacher owe to the community, using that term as one sufficiently elastic to include the city, the state and the nation? Surely we must concede that whether a teacher's employment be the result of an expressed or an implied contractual relationship, there is a moral obligation to be loyal, patriotic, inspiring leaders, both in our community and in our classroom, whose service results in an increased understanding and appreciation of our institutional life. It is incumbent upon us to be the creators of an energized, critical public opinion, which leads to the reconstruction and to the betterment of our political and social life. You will note that I do not identify the teacher's duty with either flag-waving jingoism or reactionary conservatism. The successful solution of our city, state and national problems requires all the critical thinking we can initiate or inspire. But the obligation to develop such powers in our citizenship makes it imperative that teachers should not take advantage of the privacy of the classroom to assault the mentality of immature listeners by indulging in vicious propaganda or exposing to ridicule either the ideals or the institutions of our people, in order to clear the way for the promotion and establishment of questionable ideals and alien modes of government.

I am sure I need not argue in such a gathering as this that no issue of freedom of speech or personal liberty is involved in such a statement of a teacher's obligations. The cheap radicalism of a soap-box orator and the pernicious propaganda of the oblique-minded parlor socialist cannot be tolerated in the classroom.

Teachers should be glad to take and be bound by a solemn oath, similar to that administered to the Chief Justice of the Supreme Court: "I do solemnly swear that I will faithfully and impartially discharge and perform all the duties incumbent on me according to the best of my abilities and understanding, agreeably to the Constitution and laws of the United States, and that I will support and defend the Constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same; that I take this obligation freely without any mental reservation or purpose of evasion; and that I will well and faithfully discharge the duties of the office on which I am about to enter. So help me, God."

Unionism. Perhaps no ethical question involving teachers has aroused more recent controversy in various parts of the country than the question of membership in unions. Frankness therefore demands that I refer briefly to the subject.

The aim of teacher-unionism, according to its advocates, is teacher-participation in school management and administration to a much greater degree than has been conceded hitherto. Unionism is the golden key, the long-postponed device by means of which the administration of education is to be democratized. I am not opposed to teacher-unionism, but I do not believe that it is a panacea for ills pedagogical or administrative. The movement in a city like New York may easily fall into disrepute if controlled by unwise or intemperate leaders or if there be the slightest suspicion that the movement has its origin in contentiousness, radicalism or disloyalty to our highest ideals of either our profession or our government. The answer to the question as to whether or not unionism is desirable must be found in the motives that prompt teachers to join any group, whether it be a union, a fraternity or a federation. To the extent that such groupings are prompted primarily by selfish interests, and are based upon class appeal and concepts of economic and national life that run counter to those for which our government stands, such groups, whether you call them by one name or another, are vicious and undemocratic. We can not ignore the bald fact that the schools of a democracy are the schools of the whole people, and not the schools of a particular class. Moreover, let me affirm with great emphasis that nothing can be more detrimental to our schools than the assumption that the classroom teachers constitute a laboring class, a sort of intellectual proletariat who differ both in kind and degree from supervisors and administra-

tors who, by analogy, are classed as a sort of pedagogical capitalistic class, constituting the sworn oppressors of the teachers with whom they live and labor day by day, and from whose ranks they are chosen. Any appeal to gross prejudice or to narrow class consciousness, whether labelled unionism or what not, contains the germs common to anarchism or bolshevism. A teacher's union and the general union movement among teachers are just as good or just as evil as teachers make them. It is therefore the bounden duty of teachers in such organizations to be active to prevent the use of such groups for personal, political, or professional exploitation, and, above all, to maintain and promote those fine conceptions of service to our children and to our city which have always distinguished the teaching profession.

Relationship to fellow-teachers. Need I state that teachers should display toward their superiors and their professional associates that fine regard and consideration for one's professional reputation that is the boast of the legal and medical professions?

The amenities of life and of professional relationships should be carefully observed. He whose services are marked by merit and distinction should receive the hearty appreciation of his fellows, unclouded by envy or captious criticism. With his superiors a teacher should work in a spirit of respectful, subordinated, harmonious cooperation.

The real ethical problem arises when subserviency or acquiescence in wrong are expected or demanded in place of courageous expression of conviction and the assertion and maintenance of rights. In a very real sense every one of us, from the Superintendent of Schools down to the most humble substitute, is a guardian of certain professional standards and legal rights. Therefore, no considerations of personal profit, comfort or advancement, no consideration of securing the good will and favor of those in either upper or lower ranks of the service, should prevent a courageous and outspoken assertion and sturdy maintenance of professional rights and obligations.

In short, between the teacher and his professional colleagues as well as his statutory superiors there should exist the utmost respect, appreciation and cooperation, not inconsistent with the maintenance of professional service at the highest possible level of manly self-assertion, honest achievement and orderly administration in accordance with the spirit and the letter of the law.

Perhaps a word about professional associations other than unions is not inappropriate.

No one will deny the value of concerted action in the interests of worthy ends.

We have numerous associations. As George Ade says, one can not throw a brick out of the window without hitting one of the brethren. We have a Teachers' Council, which is composed of representatives of such associations; we have a Federation, which theoretically is made up of representatives of the numerous professional associations. Recently much progress has been made in the development of a city-wide organization, intended either to supplement or to supersede some of the existing ones.

Wherever our sympathies lie, I think we should attempt to solve the problem of professional associations in an impersonal, impartial way, with an eye solely to the establishment of a representative organization which in moments of crisis or in relation to matters of grave importance, will register, not discordant and contradictory voices of a score of organizations, but will register with majesty and dignity the well-considered decision of a majority of our vast army of teachers.

In like manner, I am strongly convinced that membership in our local organizations should be supplemented by membership in a national body. We should not fail to identify ourselves with our colleagues throughout the width and the breadth of the land. Education countrywide needs a well-equipped, strongly organized, adequately financed, far-visioned organization, such as the National Education Association, in order that the teachers rather than the Carnegie Foundation or the United States Chamber of Commerce shall decide far-reaching educational policies affecting not only the teachers but the children of our country. Let not a selfish complacency prevent us from shouldering a burden which is national in scope.

Relation to Pupils. In relation to his pupils, a teacher should be an exemplar of physical, mental and moral growth. Note that I emphasize growth rather than complete achievement. If the teacher is to be a master-craftsman who discovers to the pupil his latent powers, who reveals to the pupil the golden nimbus that surrounds each head, he must be a skillful and sympathetic master to whom stupid rule of thumb procedure and bitter cynicism are unknown.

The unskillful, the unsympathetic, the cynical teacher is beyond the pale and range of an ethical code. Day by day he does irreparable injury to child nature. He finds his own lack of skill, his own mental obtuseness, his own bitterness, objectified in

the lives of innocent, well-intentioned children. Let us work without ceasing to improve our weaker professional brother, but when he has failed to respond to long sustained remedial treatment, let us be the first, in the interests of childhood, to insist upon his ouster from the school system.

Verily, the cultured, skillful, sympathetic teacher is a possession beyond price, whose influence is found not merely in the present generation, but in our children's children.

Relations to parents. In a very real and in a legal sense the teacher stands *in loco parentis* to the pupil and therefore should seek to identify himself with the interests, the plans, and the ambitions of the parent as regards his children. Churlishness, incivility, lack of cooperation, disinclination to inform and advise should be characteristics foreign to any real teacher.

Our typical failure to secure the cooperation of the children and their parents is due in large part to the teacher's remoteness and detachment from the human relationships of the home. There is no better cure for such condition than for the teacher to come into close contact with the parent through visitation, either at the home or at the school, and through various other devices such as formal parents' meetings or more sociable gatherings. In the eyes of the teacher, the pupil as one of a mass tends to lose his individuality, his identity, and it is only by making this human contact with the parent that the teacher will really see and understand the child in certain relationships that are the basis not only of individuality, but also of that teacher-insight which is the foundation of successful teaching.

Conclusion. Perhaps the much desired aims of those who are striving to set up, in concise and almost catechetical form, the standards that appear to be peculiarly applicable to the teaching profession may not be attained through such formulation. Indeed, those who prepare and disseminate such codes may find that teachers fail to display any marked enthusiasm over the principles formulated. If we meet with such failure it will probably be because we are over-emphasizing the letter rather than the spirit, of which such ethical code is but the literal expression. The spirit is all. We may, ourselves, be deceived as to the range of influence of such codes. But we should not be discouraged. The teaching profession to-day occupies higher levels of accomplishment and inspiration than ever before. We are moving ever onward and upward. The ethical codes in question may find their analogue not in the turbulent waters that rush down the

glen and the valley, roaring in their course, but rather in the quiet underground waters, unseen and unheard, that moisten and make fertile the pleasant valleys.

COULD I LIVE MY TEACHING LIFE OVER *

By I. G. WILSON

1. I would be loyal to my district, to my town, to the parents, to the pupils, to the superintendent. It pays in return with friendship, love, and dollars.

2. I would be punctual at school, at meetings called by my superintendent, and at any function where my example might be followed.

3. I would keep a question-book that I might consistently ask my superintendent concerning the things that had bothered me. Business people do this for exhausted supplies.

4. I would take care of my own problems quietly when I could not conveniently consult my superintendent.

5. I would hand in reports called for promptly and accurately.

6. I would be professional—join local, State, and National Associations, and attend teachers' gatherings.

7. I would have the best certificate that I was able to earn, as early in life as it could be acquired.

8. I would speak kindly of my predecessor, and forget about my enemies.

9. I would watch the ventilation of my schoolroom more closely, for fresh air and sunlight accomplish wonders for health.

10. I would be economical in the use of supplies, but never niggardly.

11. I would give extra time to the slow pupils, the ones who need my services most.

12. I would hesitate to send so-called bad boys to the principal or the superintendent. It would only weaken my own authority.

13. I would remember that there is good in every child.

14. I would make few rules. The fewer made, the fewer broken.

15. I would not keep pupils in at recess, for that is their natural play time.

* *The Journal of the National Education Association*, XII, 401. December, 1923.

16. I would follow my program even if visitors were present.
17. I would frequently talk of the pleasures of high school and college that my pupils might imbibe the spirit.
18. I would watch for the growth of my pupils.
19. I would visit the children occasionally in their homes and urge the parents to visit the children at school.
20. I would be exceedingly careful about neighborhood gossip.
21. I would visualize the children's future. I would build cathedrals rather than outbuildings.
22. I would place oil upon the troubled, grinding, rusty places where friction was evident.
23. I would cultivate an optimism that would not permit self-pity.
24. I would prepare carefully for a better field of service through progressiveness, education, health, and good fellowship.
25. I would try to convince my patrons that education is an investment and that taxes can never be too high when the output shows worthy returns.

Principles derived from discussions of the profession of teaching. Desirable professionalism among teachers depends upon (1) specialized training, (2) a keen sense of their specialized service, (3) adequate income, (4) and socialized self-consciousness.

Unless adequate salary scales exist, poor teachers will drive out good teachers.

"All tenure laws should be associated with regulations governing training, certification, remuneration, and annuities or pensions."

Participation in the benefits of a tenure law should be dependent upon professional activity and continued study as well as upon initial qualifications.

Personal and social responsibilities require teachers to formulate standards of their rights and their abilities.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Professor Smith sets up criteria for determining whether or not the members of a school faculty are members of the teaching

profession. Compare these criteria with those which are usually applied to persons who practice law or medicine to determine the professional status of such persons.

2. Classify the members of the faculty of a secondary school with which you are familiar as members or non-members of the teaching profession.

3. Select at least five professional magazines for teachers. Show in terms of Smith's criteria the professional value of the latest issues of each of these magazines.

4. Why should teachers become members of state or national teachers' associations?

5. What unprofessional tendencies have you observed among teachers?

6. What activities of teachers indicate the presence of professionalism among them?

7. To what extent do the conditions which Bonner describes interfere with the development of worthy professionalism among teachers?

8. What is a salary scale?

9. What relation has a salary scale to professionalism among teachers.

10. What relation has tenure of position to professionalism among teachers?

11. How can such formulations of ethical standards as those of Ettinger and Wilson be made vital to teachers?

12. Test the principles at the end of this chapter in the light of the readings.

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CHAPTER V

THE EQUIPMENT OF THE SECONDARY SCHOOL TEACHER

The personal characteristics of teachers. One way of discovering the desirable and undesirable characteristics of teachers consists of obtaining their pupils' opinions about them. This method has been followed by several investigators. The North Central Association employed this method in obtaining the data shown in Tables III and IV.

"To the request, List three of the elements of strength possessed by your best teacher, 13,825 replies were made: to a similar request for the three outstanding elements of weakness possessed by your poorest teacher only 9,454 answers were given. These facts would seem to argue that fewer pupils are sensitive to faults than are conscious of virtues; or that there are so many more excellent teachers than weak teachers that many pupils do not even know the qualities that constitute notable weakness."¹

The value of such judgments when obtained with care is shown by Knight² who compared pupils' general estimates of the relative merits of teachers with supervisors' ratings of the same teachers. He obtained such estimates of 39 teachers from 240 carefully selected pupils of high-school grades. When these estimates were compared with supervisors' ratings, a correlation of .743—a "high" correlation—was found.

Another way of discovering the desirable qualities of teachers

¹ Davis, C. O. The High School as Judged by Its Students. *Proceedings of the North Central Association of Colleges and Secondary Schools*, XXIV, 1924. Pp. 120-121.

² Knight, F. B. *Qualities Related to Success in Teaching*. Teachers College, Columbia University, Contributions to Education, No. 120, 1922, p. 36.

TABLE III

ELEMENTS OF WEAKNESS POSSESSED BY POOREST TEACHERS AS JUDGED
BY 9,454 PUPILS OF THE NORTH CENTRAL ASSOCIATION³

TRAITS	PERCENTAGE OF TOTAL REPLIES MENTIONING
Failure to explain and make clear	18
Lack of discipline	12
Favoritism	10
Uninteresting and uninterestedness	8
Unfairness	8
Quick temper	8
Nervousness and "lacking in pep"	7
Over-strictness	6
Easiness	6
Lack of personality	4
Ignorance of the subject	3
Lack of sympathy	3
Impatience	3
Sarcasm	2
Slovenliness	2

TABLE IV

ELEMENTS OF STRENGTH POSSESSED BY BEST TEACHERS AS JUDGED BY
13,825 PUPILS OF THE NORTH CENTRAL ASSOCIATION³

TRAITS	PERCENTAGE OF TOTAL REPLIES MENTIONING
Capability (or knowledge of one's subject)	18
Character (force, disposition, sympathy)	13
Fairness	12
Good nature, humor, kindness	10
Power to discipline	8
Power to hold interest	8
Clearness	7
Willingness to help	7
Personality	6
Sociability	5
Patience	4
Appearance	2

³ *Op. cit.*, p. 121.

consists of asking supervisors to name the causes of failure and success among teachers. By employing this method, several investigators ⁵ have found that superintendents regard the following characteristics as danger signals:

Poor discipline	Failure to cooperate
Weak personality	Disloyalty
Lack of judgment	Poor methods of instruction
Unprofessional attitude	

In the same way the following qualities have been found to accompany successful teaching.⁶

Kindness	Sincerity	Ability to discipline
Patience	Strength of personality	Fairness
Enthusiasm	Dignity	Loyalty

There are, of course, constant sources of error in the estimates of the success of teachers by their supervisors. Supervisors often know too little of their teachers to judge them accurately; besides, supervisors' judgments are probably fallible even when they know intimately the work of their teachers.

Great difficulty is encountered when an attempt is made to discover precisely the relation between the presence of certain characteristics and successful high-school teaching. Investigations conducted for this purpose by Knight,⁷ Whitney,⁸ and Bliss ⁹ deal mainly with elementary school teachers. All three employed intelligence tests to measure the keenness and alertness

⁵ Littler, Moses, and Buellesfield. (For exact references see bibliography at the end of this chapter.)

⁶ Kratz, Clapp, and Ruediger and Strayer. (For exact reference see bibliography at the end of this chapter.)

⁷ *Op. cit.*

⁸ Whitney, F. L. The Analysis of Teaching Functions. *Journal of Educational Research*, VII, 297-308. April, 1923.

⁹ Bliss, W. B. How Much Mental Ability Does a Teacher Need? *Journal of Educational Research*, VI, 33-41. June, 1922.

of the teachers included in their investigations. As compared with his correlations between success in teaching and such qualities as grades in professional courses and in student-teaching, Whitney's correlations between success in teaching and intelligence test scores are very low. While this does not indicate that persons of little wit ordinarily become superior teachers, it does indicate that within the range of abilities of the 1,200 teachers investigated there were found qualities which are more important than those differences in sheer intellect. Pliss, however, concluded that the chances for intellectually superior individuals becoming superior teachers are about twice as great as for average individuals, and about four-and-one-half times as great as for mentally inferior normal-school students. Knight who investigated both elementary and high-school teachers found a closer relation between intelligence and successful teaching in the case of the thirty-eight high-school teachers whom he investigated than in the case of the one-hundred twenty-eight elementary school teachers' records which he also investigated. Professional equipment as measured either by courses pursued or by a test of professional knowledge seems to possess a close relation to successful teaching. Whitney found standings in professional courses and tests to be more reliable as indices of success in teaching than standings in academic courses. A partial corroboration of this result is found in the records of 119 University of Wisconsin graduates of whom 31 had pursued an unusually large number of professional courses. The degrees of success achieved in teaching by all the 119 graduates as judged by their supervisors, were considerably higher than faculty ratings led one to expect. The faculty tendency to under-rate the graduates who had pursued professional courses most extensively was, however, twenty-one per cent greater than the tendency to under-rate the other graduates. Another quality which is closely related to successful teaching is interest in teaching. Although Knight did not attempt to measure interest directly, he concludes that vital, substantial interest probably prompts

certain persons to master the difficulties of teaching and thus become successful teachers.

The conclusions of these investigators are that intelligence as measured by tests, interest in teaching, professional equipment as indicated by scholarship in courses pursued and tests of professional knowledge, and the quality of academic preparation are among the most important, if, indeed, they are not the most important guaranties of success in teaching.

For the benefit of the large army of young men and women who desire to begin teaching each year, several additional observations can be made. First, within the limits of ages and amounts of experience of high-school teachers who have taught two or more years, there is only a slight positive correlation between either age or experience and success in teaching. Some of the reasons for this condition appear in the following passage entitled, "Old and Young Teachers." Second, a significant correlation exists between success in teaching and professional study after beginning to teach. Third, legibility of handwriting is no index of success in teaching. With regard to the last comforting observation, there should be added, however, Dr. Knight's statement that nearly all the teachers were "Palmer handwriting certificate holders." Finally, it should be observed that any person who is intelligent enough to teach in a high school can improve himself in practically all the desirable personal qualities which have been mentioned or are yet to be catalogued in the Landsittel rating card.

OLD AND YOUNG TEACHERS ¹⁰

BY HELEN M. DOWNEY

In 1903 Dr. G. Stanley Hall, issued the following questionnaire:

- I. State characteristic differences between very young and very old teachers of any grade from kindergarten to university.
- II. Would you establish age limits either way and, if so, what and why?

¹⁰ *The Pedagogical Seminary*, XXV, 117-140. June, 1918. Abridged.

III. What are the effects of continuous teaching on the different sexes in (a) health, (b) temper, (c) devotion to methods, (d) open-mindedness and readiness to accept and adopt new ideas?

IV. What physical, mental, and moral idiosyncrasies tend to increase with age?

V. Do older teachers tend to lose contact and sympathy with children or young people?

VI. Nature provides that parents of 25-35 more easily adjust to younger children than those of 40-50 years. Can older teachers fit more readily the nature and needs of older children, and vice versa, irrespective of increased mental attainment?

VII. Mere age and years bring a unique psychic development apart from increase in learning. Does this tend to qualify or disqualify schoolwork with any age or grade of childhood, or is there a "teaching age"?

VIII. Describe as fully as you can a typical male or female teacher of mature years who has steadily grown in knowledge and power.

IX. Describe a typical teacher of mature age who has long since ceased to grow, but has become stereotyped in opinion and method, prejudiced, and neophobiatic, and illustrate the bad effect of teaching.

X. List a few suggestions to aid teachers in conserving the period of rapid growth and in avoiding the evil of monotony, repetition, routine and mechanism.

The returns were carefully tabulated by Miss Louise Gulick, a fact which has largely made this paper possible. One normal school furnished a great part of the replies—about eighty papers—to questions I, VIII, and IX.

Two hundred thirty-one answers were received to question number I, "State characteristic differences between very young and very old teachers of any grade from kindergarten to university." The positive and negative qualities mentioned may be tabulated as shown in Table V.

TABLE V

THE POSITIVE AND NEGATIVE QUALITIES OF OLD AND YOUNG TEACHERS

POSITIVE QUALITIES			
YOUNG TEACHERS		OLD TEACHERS	
	No. of replies		No. of replies
<i>a.</i> More enthusiasm, animation, and interest in work	60	More interest in work	2
<i>b.</i> More ambitious, active, progressive, and amenable to suggestion	59	Have purpose and intelligence to plan interesting work . .	32
<i>c.</i> More sympathy with, and better liked by pupils	75	More sympathy with and better liked by pupils	6
<i>d.</i> More up to date. Methods better	25	More experienced, using more practical, and better methods	64
<i>e.</i>		More knowledge of human nature, especially of children .	31
<i>f.</i>		Better knowledge of subject matter	22
<i>g.</i>		More conservative and stable .	10
<i>h.</i>		Inspire confidence and respect .	6
<i>i.</i> Attend to details of work better	1	Attend to details of work better	12
<i>j.</i> More patient	11	More patient	11
<i>k.</i> More cheerful	6		

NEGATIVE QUALITIES

		Set in opinion, fixed in methods, resent suggestions for improvement	131
<i>m.</i> Exacting, cross, demands unreasonable, over-strict . . .	37	Exacting, cross, cranky, sarcastic, unreasonable in demands, too strict	39
<i>n.</i> Lacking in self-confidence, nervous, worry, upset by trifles	64	Nervous, upset by trifles . . .	9
<i>o.</i> Vacillating in method, obliged to experiment	58		
<i>p.</i> Poor disciplinarians	59	Lax, easily "worked," poor disciplinarians	26
<i>q.</i> Plan ineffectively through uncertainty about purposes of teaching	19		
<i>r.</i> Frivolous, not serious	15		
<i>s.</i> Do not study individuals . . .	3	Do not study individual pupils	2
<i>t.</i> Less ready to acknowledge mistakes	1	Less ready to admit errors . .	3
<i>u.</i> Self-satisfied, conceited . . .	1	Self-satisfied, conceited	6
<i>v.</i>		Personally unattractive, oddities of dress and manners . .	11
<i>w.</i> More likely to be partial . . .	1	More likely to show partiality	1

In spite of the admittedly incomplete data in connection with some of the questions, the opinions of the people who replied to the questionnaire have certain rather significant trends which can be summarized thus:

I. The most striking differences between very young and very old teachers are seen in the predominance of setness of method, fixedness of opinion, and resentment of suggestions for improvement on the part of the very old teachers. The characteristic strength of the very young teachers lies in dispositional qualities, and the weakness in mental traits, while the very old teachers' positive qualities are mental, and the negative ones are dispositional.

II. There should be age-limits for teachers. Eighteen or twenty years is the lower limit, and sixty years the favorite upper limit, if any.

III. The health and the temper suffer more from continuous teaching in the case of women than of men, but both are about equally liable to lose elasticity and open-mindedness.

IV. Negative psychic idiosyncrasies, especially, tend to a decided increase with age, mental and dispositional traits being about on a par; there is also a marked increase of negative physical qualities. Old teachers are not invested with so preponderantly many negative qualities as are old people in general.

V. Older teachers tend to lose contact and sympathy with children and young people, but fit more readily the nature and needs of older children.

VI. Teachers who grow in power and knowledge with continuous service are endowed with or acquire positive dispositional qualities, while those who cease to grow possess a superabundance of negative dispositional qualities.

VII. Positive dispositional traits—especially of a social kind—are an even greater factor in the conservation of the period of most rapid growth of the teacher than are professional interests and activities outside of the classroom, which are rated, however, as very important.

VIII. In general, dispositional qualities—both good and bad—are much more impressive than any other traits in a teacher. The emphasis on dispositional qualities in the foregoing data would seem to imply that by virtue of his overwhelmingly negative dispositional qualities the very old teacher should be dis-

pensed with; but Book ¹¹ made a finding which is pertinent here. He writes:

"Again, the favorite teacher was described as enthusiastic, energetic, young. . . . In fact most pupils think that only young teachers are capable of understanding them. . . . Old teachers are, as a rule, disliked.

"This qualification was emphasized in still another way. Many pupils suggesting improvements for the High School strongly urged the getting rid of all old teachers and replacing them by young teachers who were strictly up-to-date, interested in their work, and thoroughly in sympathy with their pupils.

"It should be stated, however, that the pupils did not mean by old and young a mere age distinction in the ordinary sense. According to them some teachers have never been young, others never get old. Being young, in the students' own words, means to be enthusiastic, full of life, up-to-date, thoroughly in sympathy with young people and their ways. . . . To be old is to be cranky, pedantic, old-maidish, behind the times, out of touch with the young, impatient, cross, to become indifferent, suspicious, didactic, set in one's ways; more and more the creature of habit, and the slave to one's yesterdays, to lose interest in one's work, and finally to reach a sort of static condition where one ceases to grow, and gets fat. The teacher who was described as quite an old lady, but at heart as young as any girl in her class, who was up-to-date in her teaching and knew just how a girl studies her lessons, her ideas about clothes and all her likes and dislikes, was young in the sense the pupils used the word, although she had taught in that school for over thirty years."

Thus the very old teacher who has the positive qualities mentioned would never be accused of being old. The spirit, not the years seems to be the measure of age.

The fundamental point for pedagogy, then, is that age in disposition is what counts for the teacher. Just so long as he retains certain dispositional qualities, the older teacher is the superior of the younger teacher, by virtue of his wider experi-

¹¹ Book, William F. *The High School Teacher from the Pupils' Point of View. Ped. Sem., Vol. XII.*

ence and greater knowledge, which latter, however, become as sounding brass if he have not the former.

THE TRAINING REQUIRED OF SECONDARY SCHOOL TEACHERS IN AMERICA ¹²

NORTHEASTERN DIVISION

Pennsylvania

State requirements. The prospective teacher of mathematics in a high school of this state must obtain either a "college provisional certificate" or a "college permanent certificate." The first of these certificates entitles the holder to teach for three years the subjects prescribed for a public high school of the third class or to teach in any public high school of the commonwealth the subjects indicated on its face. The applicant for this certificate must be a graduate of an approved college or university and must have successfully completed at least 200 hours of work of college grade in education. Each subject mentioned on the face of the certificate is one in which the candidate has had in college at least twelve semester hours including professional training in the teaching of the subject. An applicant for a "permanent college certificate" must not only have met the same scholastic requirements as above, but also must have taught successfully for three years in the public schools of Pennsylvania. Evidence of successful experience includes reports on: (a) Personality (appearance, voice, power, character, cooperation); (b) preparation (command of English, specific knowledge, general scholarship, professional equipment); (c) technique (room conditions, selection and organization of subject matter, resourcefulness, motivation, conclusiveness); and (d) pupil reaction (efficient functioning of habits and skills, command of subject matter, thinking ability, expression, tastes, appreciations and ideals).

After September 1, 1927, no person may be employed in any school in the state who does not show graduation from an approved college or university, or an approved state normal school, or who does not furnish evidence of equivalent education. (Pro-

¹² In 1923 The National Committee on Mathematical Requirements submitted a comprehensive report upon certification requirements of high school teachers. The following account is an abridgment of that report, pages 447-508.

vision was made, in 1921, for summer courses of nine weeks each in the thirteen state normal schools and in twelve of the colleges and universities of the state to enable those now in the service to obtain such further education and training as may be required to meet the standards set for 1927.)

In *Philadelphia*, a candidate as teacher of mathematics in a high school must pass examinations as follows: (a) Oral; (b) on methods of teaching and management; (c) on algebra, plane and solid geometry, plane and spherical trigonometry, analytic geometry, and calculus. The names of those who receive an average of 70 per cent or over are placed on the eligible list. To have been admitted to the examinations, the candidate must have presented proof of graduation from an approved college, or of equivalent education.¹³

Cambridge, Mass.

To be eligible for examination and to be rated in experience, an applicant for a high school certificate must have: (a) A degree from an approved college or university, with evidence of professional training, or conclusive evidence of special fitness; and (b) three years of successful experience, for non-residents, in teaching high school studies; two years, for residents.

The Board of Examiners holds examinations annually. Applicants for teachers' certificates are rated by the Board under three heads: scholarship, experience, and personal fitness. In order to secure a certificate an applicant must be rated 75 per cent or higher in each of these. A rating in scholarship is obtained in one of the following ways: (a) By averaging the marks if the applicant is required to take a written examination; (b) in case the applicant is not required to take a written examination, by averaging the marks received at college, university, certified technical high school, state normal school or Boston normal school, or the marks given in a teacher's certificate granted by the Board of Examiners of any city or any state in the United States and which may be accepted by the Board of Examiners of Cambridge. Rating in personal fitness is determined after an oral examination of the applicant and the consideration of the evidence relative

¹³ This, and more, is of course set forth in the *state* requirements for its high school teachers.

to his character, previous teaching experience, and the medical examiner's report relative to health.

NORTH CENTRAL DIVISION

Illinois

State requirements. Official documents state that every teacher (including the principal) in a recognized high school ought to have an educational preparation equivalent to: (a) Completion of a four-year high school course; and (b) completion of at least two years beyond a high school course in a higher institution of learning (normal school, or college, or university). The principal of any recognized high school must hold either a *high school certificate*, or a *supervisory certificate*, or a *first grade certificate* endorsed for high school work by the county superintendent. *Second grade elementary certificates* when endorsed by the county superintendent are made valid by the law for teaching in the ninth and tenth grades, but such a certificate is not deemed suitable for a teacher in a recognized high school.

A *county* supervisory certificate, valid for three years for teaching and supervising, cannot be granted without an examination in English, educational psychology, history of education, and school administration. Two classes of applicants may be admitted to this examination: (a) Those who have completed the two-year course of a recognized normal school and have taught or supervised successfully for two years; (b) those who have completed two years of work in a recognized higher institution, one of which is in a normal school or an equivalent preparation, and who have taught or supervised successfully for two years.

A *state* four-year supervisory certificate is valid for teaching and supervising in all grades of the state. The requirements of this certificate are: (a) Graduation from a recognized high school and from a recognized normal school, or an equivalent preparation; (b) three years of successful supervision, two of which shall have been in the state of Illinois on a county supervisory certificate; (c) a successful examination in English, educational psychology, sociology, history of education, and school management, administration and supervision; (d) the preparation of a thesis on one or more problems of school administration, the subject or subjects of which shall be selected from a list prescribed by the Superintendent of Public Instruction.

To be admitted to the examination for a *county* high school certificate, valid for three years, an applicant must present credentials showing the completion of two years of successful work in a recognized higher institution with the following credits: English (6 semester hours), educational psychology (3 hours), principles and methods of teaching—pedagogy (3 hours), and electives (48 hours). The applicant must pass an examination in English and pedagogy, and in six high school subjects, three majors and three minors, chosen as follows—one subject from each of the groups: (i) mathematics; (ii) history; (iii) science; (iv) language or literature; and two other subjects chosen from the list of high school subjects. This county certificate is granted without examination to those who have presented the following certificates: (a) Graduation from a recognized college; (b) faculty recommendation of ability to teach in the high school; (c) credits for English (8 semester hours), Education (6 hours), three majors of not less than 16 semester hours each in three high school subjects or group of related subjects; (d) Electives sufficient to make up the remaining number of 120 semester hours required for graduation.

The requirements for the *state* four year high school certificate, valid for teaching and supervising in any high school, and in the seventh and eighth grades of any district in the state, are: (a) Graduation from a recognized college or university, or the completion of an equivalent preparation; (b) three years of successful teaching, two of which shall have been in the state on a first grade, a high school or a supervisory county certificate; (c) a successful examination in English, educational psychology, and the principles and methods of teaching; and (d) the preparation of a thesis on one or more secondary school problems, the subject or subjects of which shall be selected from a list prescribed by the Superintendent of Public Instruction.

To be admitted to the examination for a first grade county certificate the applicant must present evidence of graduation from a recognized four year high school, or equivalent preparation, and six months of successful teaching. The examination is in: Orthography (including spelling), civics, Illinois history, physiology, arithmetic, pedagogy, English, algebra, general history, and any three of the following natural sciences: botany, zoology, physics, chemistry, and physiography. A general average of 80%, with a minimum of 60% is required in the examinations. The certificate is also issued to a graduate of a recognized normal

school, or of an institution offering an equivalent preparation, provided the applicant has had one year of successful practice teaching and applies for the certificate within three years after graduation. The equivalent of graduation from a recognized normal school is attendance of two years in a recognized higher institution in which the following credits have been earned: English (6 semester hours), mathematics or natural science (6 hours—educational psychology, history of education, school administration or principles and methods of teaching), practice teaching (6 hours), and electives (30 hours). The practice teaching must be in a training school under competent and close supervision.

A four-year state elementary school certificate is valid for teaching and supervising in the elementary schools and in the first and second years of the high school of any district in the state. The requirements for the certificate are: (a) Graduation from a recognized high school and from a recognized normal school, or an equivalent preparation, (b) three years of successful teaching, two of which shall have been in the state on a first grade county certificate; (c) a successful examination in English, educational psychology, and the principles and methods of teaching; (d) the preparation of a thesis on one or more elementary school problems, the subject or subjects of which shall be selected from a prescribed list.

For the second grade elementary certificate (county), the applicant must present evidence of graduation from a recognized two-year high school or an equivalent preparation. The applicant for this certificate is examined in: Orthography, civics, Illinois history, physiology, penmanship, reading, grammar, geography, United States history, arithmetic, general science, pedagogy, and the principles and methods of the state course of study. A general average of 75%, with a minimum of 60%, is required. The second grade certificate may be granted without examination to those who have completed the equivalent of the first (junior) year's work in a recognized normal school. The equivalent of this work is attendance in a recognized higher institution in which the following credits have been earned: English (6 semester hours), mathematics or natural science (6 hours—educational psychology, history of education, school administration, or principles and methods of teaching), and electives (6 hours).

Chicago requirements. There is only one city of over 100,000

inhabitants in the state, namely, Chicago (population 2,701,705). No certificate to teach an academic subject in a high school is issued to a candidate who has not passed the examinations of the Board of Education, conducted with special reference to the position sought. The examination in any subject may include questions in methods of teaching and may be, in part, oral; if so divided the oral examination does not exceed more than 20% of the total points required for passing the written examination. To be admitted to the examination the candidate must present credentials showing: 1 (a) Graduation from an accredited college (having a four-year course beyond the regular four-year high school course) and (b) two years of successful experience in graded schools; or 2 (a) Graduation from an accredited college, and (b) completion of the required work in The Chicago Normal College,¹⁴ and (c) one year of successful experience in graded schools. The examination is in one major and three minors. When the major is mathematics the minors are English, a professional study, and any language or science minor. When physics or chemistry is a major, mathematics or a science may be a minor. A general average of 80% must be obtained and no subject below 50%; the major subject must count as two-fifths in the examination. A general knowledge of the subjects such as shall indicate sufficient familiarity to enable the candidate to teach them is expected in all minor subjects. In major subjects it is assumed that the candidate has made a speciality of the one selected and a more special and exhaustive test is made. The usual college courses, with their expository lectures, added to what may be presumed from the candidate's years of experience as an instructor, indicate the ground that may be covered in an examination.

Cleveland, O. A candidate as teacher of mathematics in a senior high school must, in general, have had "four-years of approved education beyond a four-year high school course, or the equivalent of a full standard college course." In making a selection among several possible candidates, consideration of comparative fitness to render the best service shall determine each case of first appointment. The first three years of service are strictly probationary. Reappointment is based not only on success already achieved, but also on evidence of growth warranting the

¹⁴Nothing but elementary school mathematics is taught in this "College" Announcement, Chicago Normal College, 1918-1919.

expectation of service commensurate with any automatic increases in salary provided by the schedule.

Detroit, Mich. Every candidate as teacher of an academic subject in a high school must have had: (a) The equivalent of a bachelor's course, with a good record, in a four-year college or university; (b) 11 semester hours in education; (c) one year of successful experience in teaching. No attempt has been made yet to designate the distribution of the eleven hours of education. Some members of the Board of Education believe that these hours should be spread over: Educational psychology, tests and measurements, philosophy, history and administration of education.

Kansas City, Mo. According to printed regulations, high school certificates may be granted on the basis of approved credentials, or examinations. In the latter case the prospective teacher of mathematics must pass in the following subjects, and also in one science as a minor: algebra, geometry, trigonometry, and analytics. Approved credentials call for graduation from a college or university approved by the Superintendent as having courses required for graduation equivalent to those in the University of Missouri, and satisfactory evidence of two years of successful teaching experience under approved conditions. In the absence of courses especially fitting the candidate for the work for which he applies, or in case these courses seem inadequate, he must write a thesis upon, or take an examination on, any subject special or general, that may be required by the superintendent of the examining board.

Minneapolis, Minn. In order that a candidate be eligible as a senior high school teacher he must be a graduate of a four-year collegiate course of the grade furnished by the University of Minnesota, and have made special and adequate study of the subject or subjects to be taught. Further the candidate must have had two years of successful experience in teaching under approved conditions. Such experience must have been gained either in the Minneapolis public schools or in schools of a grade corresponding to that of the Minneapolis high schools. Excess of one type of qualification—whether of education or of experience—beyond the minimum requirement, will not be accepted as a substitute for the lack of the minimum qualification of the other type.

Omaha, Nebraska. The prospective teacher of mathematics in a high school must be a college graduate who specialized in

mathematics at least to the extent of taking courses through a course in analytic geometry, and preferably through a course in calculus also. The teacher must also have had some training in the pedagogy of mathematics. Omaha does not require state certification of its candidates as teachers.

SOUTH ATLANTIC DIVISION

(Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia)

Of these states the District of Columbia has been selected as exhibiting the highest standards of the Division in connection with the appointment of its high school teachers of mathematics. To indicate another standard, notes on certification in Virginia are culled from a recent survey report. Of the six cities in the division, with more than 100,000 inhabitants, it seemed desirable to give a brief sketch of the organization in Atlanta, Ga., in addition to that of Washington, D. C. A report on contributions made by The Johns Hopkins University, by the University of North Carolina, and by the University of West Virginia, are added in conclusion.

District of Columbia requirements. The city of Washington is coterminous with the District of Columbia. According to regulations of 1906, no person without a degree from an accredited college, or a graduation certificate from an accredited normal school, such normal school graduate having had at least five years of experience as a teacher in a high school, is allowed to teach any academic subject in a high school. No such teacher is appointed until he has passed an examination prescribed by the Board of Examiners. This examination is both written and oral. The written examination for the prospective teacher in mathematics is on mathematics as a major and on two minors. For the major the examination is in the following subjects: Elementary and college algebra, plane and solid geometry, plane trigonometry, elements of conic sections, elements of differential and integral calculus. The prescribed minors are in: (a) English; and (b) psychology and pedagogy (which includes (i) history of education, (ii) principles of education, and (iii) practical methods of application of these principles). The purpose of the English minor is to test the applicant's ability to use the English language, and includes a theme of about three hundred words to be writ-

ten in good, clear idiomatic English on a subject to be designated by the Board of Examiners at the time of the examination.

The oral examination is prescribed to enable the examiners to estimate the applicant's general personal fitness for the position as a teacher, and involves considerations of knowledge, culture, education, experience, resourcefulness, record as a student and teacher, etc.

The entire examination must be taken at one time. Of a total 100 credits, 60 and 40 are respectively assigned to the written and oral examinations. The oral examination of a candidate is not held unless he makes at least 70% in his major and at least 40 out of the 60 credits in his written examination. The examination in its entirety is not considered unless the applicant makes at least 70% in: (a) Written and oral English; (b) record as a teacher; (c) personality. The names of those who attain to a final total of at least 70% are placed on an eligible list, arranged according to rank, from which appointments are made in order of their rank as vacancies occur in the position for which the candidates have respectively qualified. Any name placed upon the eligible list remains on the list without further examination for a period of two years.

Licenses to teach are issued for a period of two years. No one is licensed unless he passes a physical examination conducted by a physician authorized by the health officer of the District of Columbia.

Certification in Virginia

Virginia issued thirty-six separate varieties of certificates to teachers before 1918, when the number was reduced to seven.¹⁵ Three of these have interest for us: (a) *Collegiate Professional Certificate*; (b) *Collegiate Certificate*; and (c) *Normal Professional Certificate*.

The collegiate professional certificate is the highest grade of certificate provided, and is issued to graduates of a standard four-year college, university, or normal school, whose college work has included fifteen per cent, or nine session hours, devoted to purely professional study and practice teaching. It is a

¹⁵ The information here and in what follows is taken from "Virginia Public Schools, A Survey of a Southern State Public School System." By the Virginia Education Commission, and the Virginia Survey Staff. Part one. Yonkers-on-Hudson, World Book Company, 1920.

"blanket" certificate qualifying the holder to teach any subject or subjects in any grade of any public school in the state. It is valid for ten years and renewable for a similar period.

The requirements for the collegiate certificate are the same as for the collegiate professional certificate except that there is no requirement for professional study and practice. Its holder is entitled to the same privileges, but this certificate is valid for five years instead of ten, and renewable for ten if, in the meantime, the holder has met the requirement for professional study and practice teaching.

The normal professional certificate is issued to graduates of the two-year professional course in a standard normal school based on the completion of a standard four-year high school course. It qualifies the holder to teach any grade or grades in the elementary school, and, if a graduate of the two-year course offered at Virginia state normal schools for the special training of high school teachers, the holder may receive a special certificate permitting him to teach any or all subjects in the first two years of the high school course. The normal professional certificate is valid for ten years and renewable for a similar period from time to time.

A "*local permit*" may also be issued by a division superintendent on his written request to employ a person who does not hold a state teacher's certificate. It may be terminated at the pleasure of the division superintendent, and in no case is it valid for a period lasting longer than the last day of June following its date of issue.

Atlanta, Ga.

According to Rules of the Board of Education in 1920, high school teachers are here grouped as: (1) Principal, (2) Assistant principal, (3) Heads of departments, (4) Honor group of associates, (5) Associates. To qualify as an associate a candidate must have: (a) A baccalaureate degree from a standard college; (b) equivalent of 11 semester hours in education; (c) three years of successful experience in junior or senior high schools. Those in the honor group of associates must have: (a) A superior degree from a standard university; or (b) six summers of certified work in at least two subjects per summer in a standard school; or (c) unusual skill, activity, and power in teaching as shown by marked and notable results. This type of teacher without the qualification of (a) or (b) would not be considered

for the honor group until the end of the third year in the Atlanta system. Excellent teaching must be an accompaniment of (a) and (b). Heads of departments are recommended by the principal and chosen if possible from the honor group of associates. Principals must have: (a) Master's degree from a standard college; or (b) long service proving special aptitude for the work of principal; (c) special training in supervision and administration.

SOUTH CENTRAL DIVISION

(Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas)

In this Division we have selected the state of Kentucky for special consideration. While here as in other states of the Division, the state law requires of its high school teachers only two years of college work after graduation from a four-year high school, the facilities provided for amplifying such training, in the case of the prospective teacher of mathematics, seem more highly organized. Outside of this state the cities of Birmingham, Ala., and Dallas, Texas, appear to have standards as high as those of any of the seven other cities in the Division with not less than 100,000 inhabitants each.

Kentucky

State requirements. The candidate as teacher in a high school must give satisfactory evidence of scholarship equivalent to graduation from a four-year standard high school and, in addition thereto, the equivalent of two years' work in college or normal school, a part of which should be in professional or pedagogic subjects. Exceptions to this requirement may be made with those who teach and supervise in second and third class high schools¹⁰ when one year in college or normal school in addition to high school graduation may be accepted as satisfactory, temporarily.

A candidate may also become a teacher in a high school on the basis of a special high school certificate obtained by examination in English, mathematics (arithmetic, algebra, and geometry), United States history, civil government, and pedagogy.

¹⁰Second class high schools are those maintaining a three-year course; third-class, those maintaining a two-year course.

Many school boards (including those of nearly all the classified cities and towns of the state) require that the candidate as teacher in a high school shall have graduated from a college or university requiring a four-year high school course for entrance, and offering a four-year course for graduation, and a certain amount of theoretical professional training. Such a candidate must hold one of the following four certificates entitling him, without examination, to teach in any public school of the state: (i) *Elementary Teacher's Certificate* (good for two years); (ii) *Intermediate Certificate* (good for four years); (iii) *Advanced Certificate* (good for three years); and (iv) *Life Certificate*. It is stated that the holder of each of these certificates must have been a graduate of a college or university, as indicated above.¹⁷ The first of these certificates, which may be granted on the completion of one year of study in the department of education of the state university, for example, calls for courses equivalent to not less than three year-hours in extent and including instruction in history of education, principles of education, principles of pedagogy, and special study of secondary education. The second certificate, granted after two years of study in a department of education, requires the student to have taken an equivalent of not less than six year-hours in educational subjects including special study of secondary education, educational psychology, history of education, methods in education, and high school administration. One-fourth of this work may be offered in practice teaching under the direction of an experienced supervisor. The third certificate is granted after three years of work in professional and pedagogic subjects equivalent to twelve year-hours (one-third for principles of education, one-third for history of education, and one-third for secondary education). At the end of three years a Life Certificate may be substituted for an Advanced Certificate, on the presentation of satisfactory evidence of his teaching ability and moral character.

A candidate as teacher of mathematics in high schools of Louisville must have at least an A.B. degree, and one year of successful teaching experience,—not necessarily in mathematics. Further, the candidate must have had mathematics as either a major or a minor subject while taking the A.B. course.

¹⁷ This statement is on the authority of Kentucky Department of Education, Rules and Regulations, June, 1916, p. 1. It seems to be contradicted by state normal school catalogues (see later).

Birmingham, Ala.

An applicant for a position as head of a department of mathematics in a high school must be qualified as follows: (a) He must be a graduate of a standard college or university, "which requires for admission the equivalent of a good high school course"; (b) he must present evidence that he has had two years of graduate work in a university, with mathematics as a major topic. In lieu of graduate work, experience of not less than three years in teaching the subject, together with summer work at a university, may be accepted.

To qualify for the position of Instructor in a mathematics department the applicant must be a graduate of a standard college or university with two years of teaching experience subsequent to graduation.

Dallas, Texas

A candidate as teacher of mathematics in a high school is required to be a "graduate of a standard college, and to have had two years of successful experience as a teacher." There is no fixed requirement as to the amount or kind of previous mathematical study or professional training.

WESTERN DIVISION

*(Arizona, California, Colorado, Idaho, Montana, Nevada,
New Mexico, Utah, Washington, Wyoming)*

In this Division we select for consideration the state of California, which is, on the whole, notably higher in its standards for the preparation of teachers for high schools than any other state of the Division. Outside of this state the city of Portland, Oregon, seems to have standards as high as those of any of the four cities of not less than 100,000 inhabitants.

California

State requirements. A candidate for a certificate to teach in a high school (a) must have received ¹⁸ a bachelor's degree from a standard college requiring not less than eight years of high school and college training; (b) must have submitted evidence that in

¹⁸ Based on the regulations of 1920.

addition to the academic and professional courses required for the bachelor's degree, he has completed at least one year of graduate study, 26 units (semester hours), doing full regular work, though not necessarily a candidate for a degree, in an approved teacher training institution. Such graduate study shall include at least one full year course of advanced or graduate work in at least one of the subjects taught in the high school. (c) He must also submit evidence that he has completed in undergraduate or graduate standing, or the two combined, not less than fifteen units of work, in courses listed in the department of education in the institution in which the graduate work is completed, or courses in other departments of that or other institutions accepted as preparation for teaching by the department of education.

The required fifteen units of work in the department of education must include the following courses: (i) School and classroom management, or equivalent work (1 unit, minimum); (ii) work in actual practice teaching, with conferences (4 units, minimum); (iii) a teacher's course in at least one subject in which the candidate expects to be recommended for certification, if such course be given in the institution and be accepted as or listed under, the work in education (3 units, maximum, for all such courses); (iv) a course in secondary education, presenting particularly the purpose and attainable goals of high school work (2 units, minimum); (v) such other courses relating to the theory, function and administration of education, as are necessary to complete the required 15 units.

It is required that the practice teaching shall be done under the general supervision of the department of education of the college or university in which the year of graduate work is taken, and may be done in schools of elementary or secondary grade, although preferably in secondary school work of the kind the candidate is preparing to teach, and under the direction of competent instructors in such work. The work in practice teaching may also be done in connection with the training school of any California state normal school, of which there are six (at Chico, Fresno, San Diego, San Francisco, San Jose, and Santa Barbara).

When the graduate work required for the recommendation for the high school certificate is completed to the satisfaction of the department of education of the institution in which such work is done, the accredited school or college or department of education prepares a formal recommendation to county, or city and

county, boards of education, stating that the candidate has satisfactorily completed all the requirements established by the State Board of Education for recommendations for the high school certificate in California, and that, in the judgment of the school or college or department of education issuing the recommendation, the candidate is worthy to receive a high school certificate in any county, or city and county, of the state.

Each recommendation states on its face the major and minor subjects which the holder thereof has taken in the institution or the kind of work the candidate is qualified to do.

In connection with the above statement of what at first may seem to be very high standards, it should be borne in mind that the law does *not* require that the teacher shall teach either his major or his minor subjects. This is entirely a matter for local authorities to determine. At present there is in the state an insufficient supply of well-trained teachers.

Portland, Oregon

In Oregon, one-year state certificates may be issued upon application, to *any* graduate of a standard college or university (that is, such as is standardized by the Bureau of Education, Washington, D. C.). The holder of a one-year state certificate may, after six months of successful teaching experience in the state, and upon recommendation of the county superintendent of the county in which the applicant last taught, receive a five-year state certificate. The holder of a five-year state certificate may, after thirty months of successful teaching experience in this state and upon the recommendation of the county superintendent of the county in which the applicant last taught, receive a state life certificate. Each of these certificates entitles the holder to teach in any high school of the state. Into the question of others who may also teach in high schools, we shall not enter.

In Portland all applicants for positions in the high schools are required to have at least two years of teaching experience. The teachers are not appointed on the competitive examination plan employed by many cities; they are elected by the Board of Education upon the recommendation of the Board of Superintendents. Prospective teachers of mathematics are not required to present credentials differing from those of prospective teachers in other subjects. The following "good rule of action" recommended by

Professor Cubberley ¹⁹ is thus disregarded: candidates as teachers in city high schools should be graduates from a college or university of standing, and furnish evidence of special preparation for the particular work done.

A typical secondary school teacher. During the school year 1921-1922, Professor Davis conducted an investigation of the training, experience, salaries, and educational judgments of the high-school teachers of the North Central high schools.²⁰ In summarizing the portion of the report which pertains to academic teachers, Davis says:

The typical academic teacher of the North Central accredited high schools is represented thus: He (or she) is an unmarried individual, between twenty-six and forty years of age, who began teaching shortly after reaching the twentieth birthday, and who expects to continue permanently in the teaching profession. This individual was educated in the public elementary schools, then spent four years in a public high school which enrolled about 100 pupils, graduated from the classical curriculum of that school, spent four years either in a State University or a denominational or endowed university or college, where he pursued (among other studies) one major and two minor subjects. To both the major and the first minor subjects he devoted over 25 semester hours and to the second minor subject in excess of ten semester hours.

While in college this typical individual also pursued a teachers' course offered in the department of his major or minor interest, carried approximately 15 semester hours in the theoretical and practical courses in Education, had in the neighborhood of 20 supervised class observations of expert teaching in elementary or high school subjects, and observed work in two or three depart-

¹⁹ *The Portland Survey*. A textbook on city school administration based on a concrete study. Yonkers-on-Hudson, 1915. A Report of Supplementary Survey of Portland Public Schools, by P. W. Horn, was published in April, 1917.

²⁰ Davis, C. O. The Training and Experience of North Central Association Teachers. *Proceedings of the North Central Association*, XXVII, Part I, 24-54. 1922. In this investigation 15,881 teachers responded to questionnaires distributed and collected by their own principals. Of these teachers, 5,203 were men.

ments of instruction given by three or more teachers. No practice teaching, however, was afforded this mythical individual. He has, however, within the last three years pursued post-graduate courses in the university or college, either during the regular year or in the summer school.

Furthermore, this typical individual has been teaching in the public schools for something over five years, although he has occupied his present position for only about three years. He has already had at least three removes, and has taught in at least two (and probably three) high schools. He is teaching in but a single department of work, and that is the one for which he specifically prepared himself in college. He has five class recitation periods per day, instructs from 100 to 125 pupils per day, and draws public money by virtue of the fact that he holds a university or college teacher's certificate valid for life.

The present salary of the typical individual, if a man, is between \$2,001 or \$2,500, and if a women, between \$1,501 and \$2,000. On this salary the individual is enabled to meet all legitimate expenses and to place in a saving account from 10 per cent to 20 per cent of what he receives. During the past two years, he has added to his salary a sum considerably larger than \$200, and, if he were teaching in 1914-15, his present salary as compared with what he then received is larger by from 75 per cent to considerably more than 100 per cent.

This typical individual as he looks back over his work in Education in college has a very high regard for the courses in Principles or Methods of Teaching and for Educational Psychology. He holds a tempered view with respect to work in Principles of Education, Educational Sociology, and Educational Administration. For courses in the History of Education, Tests and Measurements, and Vocational and Industrial Education he has a mild contempt, accepting them but not being very enthusiastic about them.

On the other hand, this typical North Central teacher appears to believe that teacher's training schools may very wisely give more attention to courses dealing with Practice Teaching, Observation of superior teaching, and more practical Methods Courses. He also regrets that he did not secure a broader cultural education, did not delve more deeply in his field of specialization, and did not have more work relating to public speaking and community life.

Furthermore, this typical teacher believes that the quickest and

best road to great improvement while in service is by means of Summer Schools, Private Reading, Travel, Better Supervision, Teachers' Meetings, and particularly by lightening the teacher's loads and paying sufficiently large salaries to permit teachers to take advantage of opportunities for self-development.

A rating card for teachers. The qualities mentioned by pupils, those cited by investigators, and other qualities which are also believed to be desirable are combined in the Landsittel rating plan. This chart may, therefore, be used either as a self-rating plan by teachers or as a score card by supervisors.

SUPERVISOR'S SCORE CARD ²¹

.....		
<i>Name</i>	<i>School</i>	<i>Location¹</i>
.....		
<i>Subjects and Grades</i>		
<i>Date</i>	<i>Time of Inspection; Beginning</i>	<i>Leaving</i>
I. PERSONALITY 250		
1. Appearance		(30).....
2. Poise		(35).....
3. Health, animation		(35).....
4. Judicial sense		(35).....
5. Moral, social and religious interests		(35).....
6. Professional spirit		(35).....
7. Aggressiveness, initiative		(45).....
II. SCHOLARSHIP 220		
1. General		(45).....
2. Special		(35).....
3. Professional training		(50).....
4. Command of English		(45).....
5. Scholastic ideals		(45).....
III. METHOD 205		
1. Selection and organization of subject matter		(45).....
2. Skill and judgment in questioning		(35).....
3. Facility in exposition		(30).....
4. Mental concentration		(30).....
5. Conclusiveness, thoroughness		(20).....
6. Economy		(20).....
7. Assignment		(25).....

²¹ From an article by F. C. Landsittel entitled "A Score Card Method of Teacher-Rating." *Educational Administration and Supervision*, IV, 306-308. June, 1918.

IV. PUPIL REACTION 220

1. Command of subject-matter (40).....
2. Completeness and correctness of expression . . (30).....
3. Using knowledge (30).....
4. Tastes and appreciations (25).....
5. Democratic self-control, initiative (45).....
6. Spirit of inquiry and endeavor (30).....
7. Special skills (20).....

V. ROOM CONDITIONS 105

1. Arrangement, order (25).....
2. Attractiveness (30).....
3. Controllable hygienic factors (50).....

VI. COUNTERACTING FACTORS 100

1. Unfavorable social environment (15).....
2. Depressing professional relations (15).....
3. Deleterious hygienic or affective conditions . . (25).....
4. Temporary physical disability (20).....
5. Inferiority of pupils (25).....
- Total Score

DEFINITIVE TERMS

- I 1. Personal attractiveness, cleanliness, neatness, dress.
2. Posture, dignity, grace, self-command, composure.
3. Physical vigor, wholesomeness, buoyancy, hygienity.
4. Rational behavior, freedom from impulsiveness and irascibility.
5. Moral character, spirit of reverence, tendency toward social service.
6. Temperament, attitude toward pupils, co-operative tendencies, open-mindedness.
7. Driving power, incisiveness, inventiveness.
- II 1. Command of subject-matter, stock of general information, breadth, acquaintance with current happenings.
2. Specialized scholarship, adaptedness to position.
3. Special studies in education and training in teaching, experience under competent supervision.
4. Clearness, fluency, accuracy.
5. Scholarship standards, conception of educational aims and values.
- III 1. Adaptation, sequence, correlation, rational procedure.
2. Speed, manner, form of questions, treatment of answers.
3. Illustration, analysis or synthesis, use of devices.
4. Motivation, attention, cooperation, suggestion.
5. Effectiveness, finish, definiteness and sufficiency of modification in pupils.
6. Absence of non-essentials, completeness of utilization of time.
7. Time, adequacy, definiteness, clearness, motivation.

- IV 1. Command and evaluation of knowledge materials, sensing meaning, reflective thinking, success in reaching independent conclusions.
2. Habits of response, use of language, quality of written work, respect for proprieties in discussion.
3. Application of knowledge to life situations.
4. Refined permanent interests, ideals.
5. Responsiveness to social demands, social habits.
6. Alertness, concentration, self-activity, relevant questions, criticism.
7. Study, reading, speaking, writing, handicrafts, fine arts.
- V 1. Seating of pupils, convenience of furniture and equipment.
2. Interior furnishings, decorations.
3. Cleanliness, light, temperature, ventilation.
- VI 1. Low standards in life in the community, bad home conditions.
2. Poor supervision, annoying colleagues, insufficient salary, poor equipment.
3. Unfit schoolroom, bad weather conditions, distractions.
4. Indisposition, exhaustion, personal injury.
5. Subnormality, poor previous teaching, under-nourishment, insufficiency or unfitness of clothing.
- (Section VI seeks to correct error arising from handicaps against which the teacher may be working.)

Current principles regarding equipment of secondary school teachers. Pupils and supervisors agree fairly closely upon the personal characteristics of weak and strong teachers.

Neither excellent personal equipment nor excellent academic equipment is a guaranty of success in teaching. Teaching power is both native and acquired and must be applied in order to attain success.

Academic and professional equipment constitute a more reliable index of success in teaching than does personal equipment. Superior high-school teachers have a high rating in intelligence, personal characteristics, and academic and professional equipment.

Any person who is intelligent enough to teach can improve himself in practically all the desirable characteristics of superior teachers.

The characteristic strength of very young teachers is in dispositional traits, while the characteristic strength of very old teachers is mental.

The spirit, not the years, is the measure of a teacher's age. So long as he retains certain dispositional qualities, the older teacher is the superior of the younger teacher, provided the older teacher keeps abreast of the times in academic and professional matters. Discussions of age-limits of teachers should recognize these considerations.

Certification regulations are now based upon the personal, academic, and professional equipment of candidates. Such regulations are enforced in cities and states whose supply of candidates is great enough to admit of discrimination between the candidates. The typical teacher in a representative group of good schools such as those of the North Central Association conforms with these requirements.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Present an argument against the statement that teachers are born and not made.

2. To what extent are the arguments presented in your response to (1) supported by the evidence cited in this chapter?

3. How can a teacher surmount each of the elements of weakness catalogued in Table III?

4. How can a teacher develop each of the elements of strength catalogued in Table IV?

5. How much intelligence does a teacher need?

6. How do you account for the difficulty which well-trained persons sometimes encounter when they seek teaching positions?

7. How would you determine the age at which teachers should retire?

8. Make a tabular summary of the amounts of training required of teachers by secondary schools in different parts of America. Evaluate the standards of each city or state whose requirements are set forth in the text.

9. In what respects, if any, is the typical teacher of the North Central Association below the standards set up by the several cities and states in other parts of the country?

10. In what respects is an estimate of a teacher upon the basis

of the Landsittel rating card superior to an ordinary, general estimate?

11. Find evidence in support of the principles stated at the end of this chapter.

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PART III

SECONDARY SCHOOL PUPILS

CHAPTER VI

THE SOCIAL AND ECONOMIC COMPOSITION OF THE SECONDARY SCHOOL

The extent of the popularization of secondary education in America. The ideal of universal education has long been cherished by the American people. As late as the early national period, however, certain states regarded the rudiments of elementary subjects as satisfying this ideal and looked forward to a dim future when such rudimentary training might be provided.¹ More recent years have pressed the ideal forward so that it now signifies to many persons school facilities commensurate with mental capacities. At present, therefore, the ideal embraces high-school training designed to meet the curricular needs of all comers.

The extent to which the popularization of this ideal has taken place has been indicated in part by the statistics of high-school growth in Chapter I. Those statistics show that during the last generation, high-school attendance increased ten times faster than the general population of the country. This enormous increase does not prove, however, that there is now universality of secondary education. So long as only about 50 per cent of America's children complete the eighth grade and only about 12 per cent complete the twelfth, much remains to be done before second-

¹ Weeks, Stephen B. *History of Public School Education in Delaware*. United States Bureau of Education Bulletin 1917, No. 18.

ary education can be said to be universal. The data which are assembled in this chapter indicate certain directions in which high-school enrollment must increase in order to show a complete popularization of secondary education.

Occupational representation in central western high schools. During the year 1923-24 a request was made to Wisconsin high-school pupils for certain data including sex, the number of semesters already spent in high school, and the occupation of parent or guardian. The number and sex of the pupils from whom responses were received are shown in Table VI, together with the number and sizes of schools attended by these pupils. These schools were carefully selected as representative of both the geographical and the occupational divisions of Wisconsin. Approximately one-fourth of the high-school pupils of the state responded to the questionnaire.

TABLE VI
DISTRIBUTION OF PUPILS FROM WHOM DATA WERE RECEIVED IN POPULATION INVESTIGATION

GROUP	SIZES OF SCHOOLS	NUMBER OF SCHOOLS	NUMBER OF BOYS	NUMBER OF GIRLS	TOTAL
I . . .	Less than 100	43	1,184	1,587	2,771
II . . .	100-199	31	1,625	2,183	3,808
III . . .	200-499	17	2,078	2,602	4,680
IV . . .	500-999	8	2,219	2,717	4,936
V . . .	1000 or more	3	1,680	1,812	3,492
Totals		102	8,786	10,901	19,687

In tabulating the returns to the questionnaire, the occupations named by pupils were classified into the occupational groups used by Counts in his monograph entitled *The Selective Character of American Secondary Education*.² In addition to those oc-

²G. S. Counts. *The Selective Character of American Secondary Education*. University of Chicago, 1922. The same scheme of classification was used also by Paul F. Gaiser, in his "Occupational Representation in High Schools" which appeared in *Educational Administration and Supervision*, IX, 537-546. December, 1923.

cupations, home service was added in order to include cases in which only mothers' home occupation was mentioned. Table VII shows the occupational classification of pupils in the high schools of Wisconsin together with the corresponding data from Counts's investigation. Discrepancies between the percentages of the two investigations can be attributed in part to the fact that Counts's study was based upon the records of pupils from only four cities, while the present study is based upon reports from over 100 schools of both urban and rural localities.

TABLE VII
PARENTAL OCCUPATIONS OF 39,942 HIGH-SCHOOL PUPILS

PARENTAL OCCUPATION	NUMBER OF WISCONSIN PUPILS	PER CENT	COUNTS'S PERCENTAGES (17,265 pupils)
Proprietors	2,216	11.3	19.8
Professional service	965	4.9	9.4
Managerial service	1,335	6.8	16.5
Commercial service	1,151	5.9	9.5
Clerical service	438	2.2	5.8
Agricultural service	5,679	28.9	2.4
Artisan-proprietors	622	3.2	4.2
Building trades	920	4.7	7.7
Machine trades	1,044	5.3	7.1
Printing trades	66	.3	1.1
Miscellaneous trades	670	3.4	3.8
Transportation service	875	4.4	4.9
Public service	218	1.1	1.6
Personal service	182	.9	1.4
Miners, lumbermen, fishermen	242	1.2	.4
Common labor	1,861	9.4	1.2
Unknown	971	4.9	3.2
Home service	232	1.2	—
	19,687	100.0	100.0

The greater percentage of Wisconsin pupils whose fathers are common laborers probably indicates the most significant difference between the selective character of schools in the different localities represented. Even greater differences exist between the percentages of parents engaged in agricultural service. The high percentage of agricultural pupils in Wisconsin high schools

is, of course, due to the fact that many of the smaller schools are in localities in which nearly every adult is a farmer. Table VIII shows the differences in agricultural representation among Wisconsin schools of different sizes. This table indicates also certain differences between the representation in high schools of the following five groups: proprietor, professional, managerial, commercial, and clerical. In small schools, for example, all these groups are relatively small except the proprietors. In the large schools, however, there is fairly close agreement between the percentages for these groups in the Wisconsin schools and in the schools investigated by Counts.

TABLE VIII

PARENTAL OCCUPATIONS OF PUPILS IN SCHOOLS OF EACH GROUP

PARENTAL OCCUPATION	PERCENTAGES FOR GROUPS					COUNTS'S PER- CENTAGES
	I	II	III	IV	V	
Proprietors	11.1	10.5	11.7	9.6	13.9	19.8
Professional service	3.5	2.5	5.3	5.1	7.7	9.4
Managerial service	4.0	3.1	6.4	6.5	14.1	16.5
Commercial service	2.3	3.1	4.8	6.5	12.1	9.5
Clerical service	1.0	.5	1.6	2.1	6.0	5.8
Agricultural service	53.8	53.1	28.7	15.2	2.2	2.4
Artisan-proprietors	2.7	2.8	2.5	3.2	4.9	4.2
Building trades	2.8	2.8	4.3	6.3	6.5	7.7
Machine trades	1.5	2.0	3.5	9.5	8.4	7.1
Printing trades	.1	.3	.3	.1	.9	1.1
Miscellaneous trades	2.7	2.0	5.5	3.8	2.1	3.8
Transportation service	3.0	2.0	3.8	8.3	3.8	4.9
Public service	.4	.6	.8	1.5	1.9	1.6
Personal service	.5	.5	.8	1.5	1.1	1.4
Miners, lumbermen, fishermen	.2	1.1	2.6	1.4	.2	.4
Common labor	6.5	7.4	10.8	12.4	7.6	1.2
Unknown	3.1	4.8	5.4	5.8	4.8	3.2
Home service	.8	.9	1.2	1.2	1.8	—
	100.0	100.0	100.0	100.0	100.0	100.0

Table IX which shows the percentages of pupils in freshman and senior years from each parental occupation indicates that few large changes take place in Wisconsin high schools as a re-

sult of the early elimination from high school of pupils of certain groups. The changes which take place are, however, in the same direction as those reported by Counts and Gaiser.³ As Table X shows, the percentages for the trades and common labor groups decline slightly from Grade IX to Grade XII, while those for the group comprising proprietors, etc. increase slightly during the same period. In all cases Counts's data show greater differences than the corresponding data for Wisconsin and Washington schools.

Even though certain population groups may send a smaller proportion of their children to high schools than others do, the data here presented show that a wide range of population groups is represented in high schools. In other words, the high school appears to draw from practically all social and economic strata. Schools in which more than one-half of the pupils are drawn from agricultural, trades, and common labor groups cannot be said to be schools for the so-called non-labor groups. So far, however, the data show only that many occupational groups send many pupils to high school; Counts's discussion of his data will show in the next section of this chapter the relation between the number of pupils from each population group and the number of men engaged in each of those occupations. By showing this ratio, Counts is able to show the extent of occupational selection in the high school.

THE SELECTIVE PRINCIPLE IN AMERICAN SECONDARY EDUCATION⁴

BY GEORGE S. COUNTS

Throughout history the selective principle has dominated secondary education. At no time and in no place has there been any serious effort to extend to all classes the privilege of an edu-

³ *Op. cit.*

⁴ *The School Review*, XXIX, 657-667, and XXX, 95-109. November, 1921, and February, 1922. These articles are partial summaries of Professor Counts's monograph entitled *The Selective Character of American Secondary Education*. University of Chicago, 1922.

TABLE X

PERCENTAGES OF PUPILS IN FRESHMAN AND SENIOR YEARS (1 AND 4) FROM CERTAIN OCCUPATIONAL GROUPS

OCCUPATIONAL GROUPS	ALL WISCONSIN SCHOOLS		SCHOOLS OF GROUP IV		COUNTS'S PERCENTAGES		GAISER'S PERCENTAGES FOR WHITMAN COUNTY, WASHINGTON	
	1	4	1	4	1	4	1	4
Proprietor, professional, managerial, commercial, and clerical	29.9	32.2	52.6	53.5	55.3	71.5	18.8	27.2
Agricultural service	29.4	29.4	2.9	2.4	2.3	2.3	54.5	47.0
Trades	14.4	11.7	19.8	17.6	22.9	13.0	6.2	5.9
Common labor	9.9	8.4	7.6	6.7	1.8	.6	5.2	4.2

cation that goes beyond the period of childhood. Whether of birth or of talent, the bar has always been raised.

It is true that in the development of secondary education in our own country a theoretical departure from this principle has been made or at least attempted. Our succession of secondary schools has certainly witnessed a tendency toward democratization. As we have passed from the Latin grammar school through the academy to the free public high school, the curriculum has been broadened, and the number of students in attendance has increased. This is particularly true of the high school which, for half a century, has been expanding in a manner quite without precedent in the history of educational institutions. From 1890 to 1918, while the total population was increasing from 62,622,250 to approximately 105,253,000, the number of young people enrolled in the public high school increased from 202,963 to 1,645,171.

This remarkable development has caused some to jump to the conclusion that we have abandoned the selective principle in practice—that in the United States the public high school is patronized by all classes without distinction. Thus, in a statement issued by the teachers of the Washington Irving High School for Girls in New York City in 1911, we find these words: "A public high school differs from an elementary school chiefly in the age of its children." Such a statement assumes a practical aban-

donment of the selective principle and marks a new era in the history of secondary education.

It is evident, however, after a moment's reflection, that this view completely disregards the facts. At the present time there are probably not more than 2,000,000 students enrolled in those four years of our educational organization which constitute the conventional secondary school. Yet there are approximately 8,300,000 children of high-school age in the nation. This means that only about 25 per cent of the children of high-school age are in high school, in spite of the unprecedented growth of secondary education in recent years.

For the purpose of discovering the sources from which the high-school population is drawn and the extent to which secondary education in the United States is still selective in character, the writer during the past two years has been engaged in a rather careful study of the high-school population in four cities—Bridgeport, Connecticut; Mount Vernon, New York; St. Louis, Missouri, and Seattle, Washington. It is the object of this article to present the more important findings of this investigation.

Method of the investigation. In attacking this problem it was decided to take a relatively complete census of the high-school population in each of several typical American cities. Obviously, returns from a single high school drawing its students from a single quarter of one of our large cities would not be satisfactory because of the well-known tendency of populations of similar social and economic standing to gravitate to the same section of the city. It was thought desirable to study a community sufficiently complex to present all the more important groups (except the agricultural) found in modern society, and sufficiently large to provide representation of each of the groups adequate for statistical purposes. For these reasons, an entire city was studied in each case.

With a few exceptions, a uniform procedure was followed throughout in getting the data. All students in attendance on a certain day were required to fill out a card on which were questions asking for various educational and sociological information, the character of which will become clear in the course of this presentation. In order to avoid confusion, a set of instructions, along with a card filled out for a hypothetical case, was sent to each teacher in charge of a home room, by whom the cards were to be distributed to the students. In most cases the name of the student was not asked for. While a detailed statement and criti-

cism of the method are not possible here, it should be said that, in the main, the cards were filled out with care and that there is no reason for believing that there was sufficient bias to prejudice the results of the study.

Classification of occupations. Occupation is the central fact in the life of the ordinary person. It determines in considerable degree his place of residence, his friends and acquaintances, what he does and what he thinks, his social and economic status, and his outlook on life. The occupation of the father of the high-school student has therefore received very large emphasis in this investigation. Four or five questions, depending on the city, were asked each student concerning the occupation of his father. From the returns to those questions it was possible to get a relatively reliable and accurate idea of the father's occupation, even though he was not living or not working at the time this census was taken. In a few cases information was given for the guardian instead of the father, but the facts for the latter were used wherever available.

The first task encountered as soon as the tabulation of the data commenced was a classification of occupations significant for the purposes of this study. Since no existing classification was satisfactory, after some experimentation the following system was evolved, recognizing sixteen occupational divisions:

1. *Proprietors*—Bankers, druggists, hotel-owners, landlords, laundry-owners, lumbermen, manufacturers, merchants, mine-owners, publishers, shopkeepers, etc.
2. *Professional service*—Architects, artists, clergymen, dentists, engineers, lawyers, pharmacists, physicians, surgeons, teachers, etc.
3. *Managerial service*—Contractors, foremen, managers, officials and inspectors (private and public), superintendents, etc.
4. *Commercial service*—Agents (real estate and insurance), buyers, clerks in stores, commercial travelers, salesmen, etc.
5. *Clerical service*—Accountants, bookkeepers, canvassers, cashiers, clerks (except in stores), collectors, etc.
6. *Agricultural service*—Dairymen, farmers, gardeners, ranchmen, etc.
7. *Artisan-proprietors*—All artisans who own the shops in which they work, including bakers, barbers, blacksmiths, cleaners and dyers, cobblers, machinists, milliners, plumbers, printers, tailors, tinnerns, etc.

8. *Building and related trades*—Carpenters, electricians, lathers, masons, plasterers, plumbers, etc.

9. *Machine and related trades*—Blacksmiths, draftsmen, engineers (stationary), founders, machinists, molders, pattern-makers, tool-makers, etc.

10. *Printing trades*—Bookbinders, compositors, electrotypers, engravers, linotypers, pressmen, typesetters, etc.

11. *Miscellaneous trades in manufacturing and mechanical industries*—Bakers, brewers, cobblers, cigar-makers, cutlers, dyers, glass-blowers, milliners, platers, tailors, tanners, weavers, etc., and machine operatives.

12. *Transportation service*—Baggagemen, brakemen, chauffeurs, conductors, engineers (locomotive and marine), longshoremen, motormen, sailors, switchmen, etc.

13. *Public service*—Detectives, firemen (fire department), guards, policemen, sailors, soldiers, watchmen, etc.

TABLE XI

THE OCCUPATIONS, BY NUMBER AND PERCENTAGE, OF THE FATHERS OR GUARDIANS OF 17,265 STUDENTS IN ALL FOUR YEARS OF THE HIGH SCHOOLS OF BRIDGEPORT, MOUNT VERNON, ST. LOUIS, AND SEATTLE ⁵

	NUMBER	PERCENTAGE
Proprietors	3,427	19.8
Professional service	1,629	9.4
Managerial service	2,846	16.5
Commercial service	1,637	9.5
Clerical service	996	5.8
Agricultural service	416	2.4
Artisan-proprietors	723	4.2
Building trades	1,325	7.7
Machine trades	1,227	7.1
Printing trades	186	1.1
Miscellaneous trades	654	3.8
Transportation service	846	4.9
Public service	270	1.6
Personal service	238	1.4
Miners, lumber workers and fishermen	66	0.4
Common labor	213	1.2
Occupation unknown	566	3.2
Total	17,265	100.0

⁵ Data secured at various times during school years 1919-20 and 1920-21.

14. *Personal service*—Barbers, cooks, janitors, launderers, porters, sextons, waiters, etc.
15. *Miners*, lumber-workers, and fishermen.
16. *Common labor*—Including all apprentices and helpers.

Parental occupation and the high-school population. On the basis of the foregoing classification of occupations, the students in all four years of the high schools in these four cities were classified according to the occupation of the father or guardian. The gross results of this tabulation are presented in Table XI in which appear the number and percentage of students from each occupational group. It will be observed that of the 17,265 cases studied, 3,427, or 19.8 per cent, were classed as proprietors, 1,629, or 9.4 per cent, as professional workers, etc. There was a small number of students in each high school who did not give sufficient data to make an occupational classification possible. These were all placed in a seventeenth category labeled "occupation unknown," and constitute but 3.2 per cent of the total.

An examination of the table shows that there are very wide differences in the representation of the various groups in the high school. Some of them, such as the miners, lumber-workers, and fishermen, the printing trades, common labor, personal service, and public service, are practically without representation. On the other hand, as has already been noted, the fathers of almost one-fifth of these high-school students are engaged as proprietors. Following the proprietors are three other non-labor groups arranged in the following order: managerial service, commercial service, and professional service. Only two of the labor groups may be said to be fairly well represented, the building and machine trades.

But this table by itself is of little significance, for it throws practically no light on the question we have raised regarding the selective principle in secondary education. Do these percentages indicate selection or not? Assuming no selection, should the printing trades, common labor, personal service, and public service constitute a larger or smaller proportion of the total high-school enrolment? This is a question we are unable to answer without knowing something about the representation of these different occupations in the general population.

Comparison with the adult population. In getting occupational data for the populations of these four cities it was necessary to rely on the federal census for 1910, since the last census

is not yet available. Here we find all persons over ten years of age gainfully employed classified according to occupation. But it would obviously be fallacious to make a comparison between the number of high-school students whose fathers are engaged in a particular occupation and the number of persons over ten years of age in the general population engaged in that occupation because of the well-known fact that certain occupations, such as clerical service, are recruited very largely from youthful workers. Such occupations will be represented by a comparatively small proportion of men old enough to be fathers of high-school students. Since it has been found that the median age of such fathers is around forty-eight years, it was decided to base the comparison altogether on the number of men over forty-five years of age engaged in each occupation in the four cities. This was found to be possible by a series of simple calculations, starting with the classification of workers according to age in certain occupations. The writer would have preferred taking forty instead of forty-five years as the lower age limit, since there is a large number of fathers of high-school students between these two ages, but the census data did not permit it.

We find for each occupational group the number of children in high school for each 1,000 males over forty-five years of age. Thus for each 1,000 men over forty-five years of age engaged in managerial service in the four cities in 1910, there were 400 students in high school, when this investigation was made, whose fathers or guardians were engaged in this group of occupations. The very wide range of representation is at once apparent. At the upper extreme is the managerial service, just referred to, with a record of 400, while at the lower extreme is common labor with a record of but 17. The order of the various occupational groups is of interest. We have already noted the extremes. Following the managerial service are three great non-labor groups—professional service, proprietors, and commercial service. Then come the printing trades, which have a low absolute representation in the high-school population as shown in Table XI, because of the small number of persons engaged in these trades in any ordinary city population. The proportional representation of this group is the highest of all the labor groups and slightly higher than one of the non-labor groups, clerical service. This record is probably to be explained in terms of the superior educational qualifications required in the printing trades, the associations commonly formed in the occupation, and the stability of employment. Pub-

lic service also is well represented, probably because of the somewhat careful selection of the workers, the nature of the work, and the stability of employment. At the other end of the series are the lower and less respectable forms of labor, such as common labor, personal service, miners, lumber-workers and fishermen, and the miscellaneous trades. It should be recalled that this last group includes machine operatives and many semi-skilled workers.

The reader has perhaps observed that two of the occupational divisions recognized in the classification are not included in this discussion: the agricultural service and the artisan-proprietors. The reason for the exclusion of the first of these groups is obvious. There is no natural relation between the number of children in the high schools of a particular city whose fathers are engaged in agricultural service and the number of adults so engaged living in that city, because many of the students in this group are either not living at home or are commuting from outside the city. This group is extraneous to urban life. The exclusion of the artisan-proprietors was necessary because they are not given distinct recognition in the federal census. There they are classed either as proprietors or as artisans, depending on the preponderance of function in each case. Consequently in this study they were allotted to the appropriate divisions.

Some criticism may be made of the order in which the occupations occur. In the light of other findings of this investigation that cannot be presented in this article, managerial service certainly should not be at the top, but rather should be in fourth place. This group occupies first place here probably because of certain difficulties encountered in translating the occupational classification of the census into the classification used here. In the census, managers are not always separated from proprietors, with the consequence that the number of managers in the returns is reduced somewhat below their actual number in the population. It also seems probable that some persons occupying managerial positions in the field of commerce are returned in the census as commercial workers. With this single shift, the order should stand about as it is, except perhaps that the clerical service should be above the printing trades.

It is probable, for two reasons, that the proportion of children in high school from the laboring groups is somewhat smaller than this figure suggests. In the first place, the acceptance of the number of men over forty-five in each occupation as the basis for

comparison gives a certain advantage to those occupations in which the proportion of such men is relatively small, because over 30 per cent of the fathers of high-school students are under forty-five. As a consequence, the occupations engaging few men beyond this age are not given a representation in the general population proportionate to the actual number of fathers of high-school students to be found in them. Since, on the average, the laboring classes are recruited less from the older men than are the other groups, it is apparent that the procedure followed here favors them. Among the non-labor groups it is true that the clerical and commercial workers are likewise favored. In the second place, the average number of children per family among the manual laborers is somewhat larger than it is among the other classes of the population. This is especially true of the lower grades of labor. Therefore, if the children from these elements in the population were enrolled in the high school in proportionate numbers, their ratio to the number of adults of the parental age in the same population groups should be larger than that for children from other classes with a lower birth rate. Both of these considerations should incline us, therefore, toward a revision of percentages in the direction of larger rather than smaller differences between the two extremes.

It may be said that, in the light of this investigation of the entire high-school populations in four cities, public secondary education in the United States has not by any means abandoned the selective principle in practice. The public high school is patronized very largely by the more fortunate social and economic classes, and the lower grades of labor have as yet hardly begun to think in terms of secondary education.

Not only do the various occupational classes exhibit different degrees of representation in the high school at the beginning of the course, but those very groups that are under-represented in the Freshman year have the smallest ratio of Seniors to Freshmen. In fact, the representation of an occupation in the first year of the high school is at the same time a fairly accurate measure of its tendency to persist through the fourth year. Consequently, the differences among the groups become more and more pronounced as we pass through the school. The school population gradually becomes more and more homogeneous as the source from which it is drawn becomes more narrow, until, by the time the Senior year of the high school is reached, the student body exhibits a distinctly class character. Here the representa-

tives of the laboring classes are few indeed in proportion to their number in the general population, and the lower grades of labor have practically disappeared. This is brought out in striking fashion by the data from Mount Vernon in which the sixth grade is contrasted with the last year of the high school.

^a**The influence of economic and social status.** Dr. Holley's discussion of the influence of the economic and cultural status upon high-school attendance supplements in an important way the foregoing discussions. It will be noted that certain conditions investigated by Holley seem to influence school attendance while other conditions seem only to accompany attendance.⁶

THE INFLUENCE OF FAMILY INCOME AND OTHER FACTORS ON HIGH-SCHOOL ATTENDANCE ⁷

BY C. E. HOLLEY

Two years ago Dr. J. K. Van Denburg published the results of an interesting investigation ^a conducted in the New York City high schools. This investigation aimed, among other things, to determine the relation between the financial status of parents and the attendance, progress, and persistence of their children in the high schools. It would, of course, be difficult to obtain trustworthy data regarding the actual income of the parents; but Dr. Van Denburg believed that he could make valid comparisons if he used as an index of income the amount paid for rent (or, in case the homes were owned by the parents, the rental value of the property). These data were secured without much difficulty. From material thus obtained, the following conclusion was drawn:

"On the whole, the economic status of these pupils (so far as is shown by monthly rental) seems to be only a slight factor in

⁶ For a more detailed discussion of Holley's data, together with data from other cities, see Holley, C. E. *The Relationship between Persistence in School and Home Conditions. National Society for the Study of Education, Fifteenth Yearbook, Part II, 1916.*

⁷ A report from the Seminary in Educational Administration, School of Education; University of Illinois, Second Semester, 1913. *School and Home Education, XXXIII, 222-224, February, 1914.*

^a *Causes of the Elimination of Pupils in Public Secondary Schools.* New York: Published by Teachers College, 1912.

the determination of length of stay in the high school. * * * The general lack of evidence that poverty is the main cause of elimination, or perhaps a cause of any appreciable magnitude, is of course of the utmost importance."

Dr. Van Denburg was careful to limit this conclusion to the community from which he obtained his data; but some speakers and writers who have quoted the results of his study have not been so mindful of the dangers of wide generalization, and have made the sweeping assertion that there is no relation between the financial status of the parents and the education which their children receive.

The present writer has recently had an opportunity to test the validity of this generalization as applied to one specific community. While making a social study of the pupils in the Decatur, Illinois, high school, it was found that, in many cases, pupils then enrolled in the high school could be compared with older brothers and sisters, some of whom had graduated from high school, some of whom had attended but not graduated, and some of whom had not entered high school. In all, there were 198 families that could be studied from this point of view. These families were divided into three groups:

Group I. Those from which all of the older children had completed the high school course.

Group II. Those from which none of the older children had completed the high school course.

Group III. Those in which some of the older children had graduated from high school while some had not graduated.

We shall confine our discussion to the first two groups. Group I contained seventy-eight families, and furnished 72 per cent of the 334 children who had secured a high school education. Group II contained fifty-nine families and furnished 57 per cent of the 308 who had not finished high school. This distribution suggested that it might be possible to discover the characteristic home conditions of the two family types, and thus determine in some measure the home conditions which were favorable to high school education. A blank was accordingly prepared asking for the following data:

- (a) The occupation of the father.
- (b) The education of the father and mother in terms of years of schooling.
- (c) The family income.

- (d) The monthly rent of the home. (Where the home was owned, the rent was estimated.)
- (e) Church affiliations of father and mother.
- (f) The newspapers and magazines taken by the home.
- (g) The number of books in the home library.
- (h) The clubs or organizations attended by the father and mother.

These blanks were filled out by the pupils in conference with the teachers or principal. The results were later checked up by the principal and reports containing obvious errors were eliminated. This method of collecting data involves characteristic errors, but the results indicate that as a rule the errors counterbalanced one another.

Results of the Investigation

The differences between the two groups of homes are striking, as one would naturally expect:

(a) *Occupations.* The fathers of Group I (the families that give their children a high school education) are chiefly engaged in professional and commercial occupations. The fathers of Group II (the families that do not generally provide high school education for their children) are chiefly engaged in the artisan trades, in the semi-skilled occupations, and in the unskilled occupations.

(b) *Schooling.* The median number of years of schooling received by the parents of Group I is twelve; by the parents of Group II, eight. In Group I, 60 per cent of the fathers and 61 per cent of the mothers have had the equivalent of a high school education, while more than 91 per cent of the fathers and mothers of Group II have had less than a full four-years' high school course. Indeed, 74 per cent of the fathers and 71 per cent of the mothers in Group II did not go beyond the eighth grade.

(c) *Income.* As would be readily inferred from the statements just made, the yearly incomes and the monthly rentals are higher with those who sent their children to the high school than with the other groups. The median yearly income of Group I is \$2,000; of Group II, \$1,350. Each family included in this study contains at least three children, and the average number of children is five or six. Thus it seems that the problem of furnishing the necessities of life is a serious one for many

families of Group II. The median monthly rental paid by families of Group I is \$27.50; by families of Group II, \$20.

(d) *Home Culture.* The variation in reading matter found in the two classes of homes is also striking. Magazines of the better class were found in the homes represented by Group I, but were very infrequently found in the homes of Group II. The median library in Group I was 271 volumes; in Group II, eighty-three volumes. Ninety-seven per cent of the homes of Group II had smaller libraries than the average of Group I. (It is, of course, unsafe to place much reliance on the absolute numbers here reported; but assuming that the same tendencies to error operated in both cases, it is safe to make comparisons.)

(e) *Clubs and Organizations.* The number of clubs and organizations attended by fathers is larger for the first group than for the second, and the variety is also greater. Among the mothers, the only important difference to be noted is that the mothers of Group I are more frequently enrolled as members of women's clubs; and the mothers of Group II are largely limited to the mothers' clubs of the public schools.

(f) *Religious Affiliations.* No important conclusions are to be drawn from the data collected under this head.

Children from the Two Groups Show but Slight Differences in Scholarship. While it is clear that economic status is an important factor in determining whether, in the community that we studied, a child shall or shall not receive a high school education, it does not follow that economic status is directly correlated with intellectual ability. In so far as mental ability is measured by standing in school subjects, the differences in ability between children of the two groups are insignificant. The average semester's grade for children of Group I was 85.1 per cent; for children of Group II, 84 per cent. A difference so slight as this could justify only the conclusion that, measured by this standard, the two groups are of approximately equal ability.

The conclusions drawn from this study, then, are somewhat inconsistent with those drawn by Dr. Van Denburg. In Decatur, the parents who are well educated and economically well-to-do, are more likely to send their children through high school than parents who are neither so well educated nor so well circumstanced.

The social status of high-school graduates. The occupations toward which high-school pupils are looking is an additional indi-

cation of the character of the social and economic make-up of schools. The results of the investigation by Thorndike and Symonds together with their summaries of other investigations give the best available answer to the question, What are the occupations of high-school graduates?

THE OCCUPATIONS OF HIGH-SCHOOL GRADUATES AND NON-GRADUATES^o

BY E. L. THORNDIKE AND P. M. SYMONDS

High-school graduates make their life-careers in occupations that are among the more intellectual and more refined. Any observing high-school principal or teacher knows that his pupils very rarely become farm laborers, factory hands, cabmen, domestic servants, or salesgirls. Just how they are distributed, however, is not known for the country at large or for even any large geographical unit or large city.

Investigations have been made by Shallies (1913), Mitchell (1914), Counts (1915), Inglis (1915), Koons (1917), and in connection with the Elyria Survey (1918) with the following results.

Shallies reports that of 734 students graduating from seventy-five high schools in New York state in June, 1908, 33.6 per cent went to college, 16.6 per cent to normal school, 5.4 per cent to professional school; 16.0 per cent were engaged in teaching, 11.7 per cent in business, 8.5 per cent in trade; 5.6 per cent were at home, and 2.6 per cent were unknown as to their careers.

The letter of inquiry which secured these facts was sent in March, 1911, to the principals of certain high schools, one or more of whose graduates in 1908 had graduated from a normal school in 1910. This procedure served to select high-school graduates who went on into normal schools in excess of the representation in the state in general. How many of the principals who were asked to report the facts did so is not stated. Probably not all reported, and those who did probably represented schools somewhat above the average in the dignity of their graduates' careers.

Mitchell reports the distribution of 845 graduates from forty-eight high schools in Iowa in 1908 as shown in Table XII.

^o *The School Review*, XXX, 443-451, June, 1922.

TABLE XII
THE OCCUPATIONS OF IOWA HIGH-SCHOOL GRADUATES

	PERCENTAGE
Agriculture	5.8
Professions	4.5
Business	3.8
Commercial employees	16.1
Teaching	30.0
Studying in liberal arts colleges	16.7
Girls married	17.0
Musicians	3.2
At home	3.0

The numbers for the groups specified total 841, and this total has been used in computing the percentages.

Counts, studying the immediate futures of 20,389 graduates in 1913 from high schools in the North Central Association, reports the distribution as shown in Table XII.

TABLE XIII
THE OCCUPATIONS OF NORTH CENTRAL HIGH-SCHOOL GRADUATES

	PERCENTAGE
College	26.9
Commercial school	3.7
Trades	3.4
Farming	2.9
Normal school	7.3
Business	10.1
At home	15.1
Other occupations	14.3
Professions ¹⁰	3.3
Domestic economy and agriculture	2.4
Teaching	4.3
Unknown	6.3

The primary data used by Counts were voluntary returns sent in by the principals of 1,000 high schools during the first half of the school year 1913-14. They were asked to report the number of the boys and girls in the previous year's graduating class

¹⁰ This presumably means, at least to some extent, students in professional schools.

belonging in each of the following groups: college, commercial school, trades, farming, normal school, business, at home, other occupations, medicine, dentistry, engineering, pharmacy, law, domestic economy, agriculture, and unknown. This request is somewhat ambiguous, and, oddly enough, omits teaching, the one occupation most widely undertaken by high-school girls in the year following graduation. Counts interprets medicine, dentistry, etc., as professions, but they may oftener mean students preparing for these professions.

Inglis computes, from the data of the United States Bureau of Education for 1912, that the central tendency by states is for a trifle over one-half of the high-school graduates to continue in colleges, normal schools, or other institutions of high education.

Koons studied the graduates of a single high school (Murphysboro, Illinois) which was established in 1901. Up to January, 1916, there were 269 graduates, 117 boys and 152 girls. The occupations of these are reported by Koons as shown in Table XIII. For comparison similar facts are given for 117 boys and 152 girls selected at random from those who left school before graduation. The entries are expressed in percentages.

TABLE XIV

THE OCCUPATIONS OF MURPHYSBORO, ILLINOIS, HIGH-SCHOOL GRADUATES
1901-1916

	GRADUATES		NON-GRADUATES	
	Boys	Girls	Boys	Girls
Agriculture	3.4	0.0	9.4	0.0
Business	23.0	15.1	23.1	7.2
Industries	14.5	0.0	26.5	5.3
Housewives	0.0	46.7	0.0	46.1
Teaching	6.9	21.0	0.9	3.3
Professions	12.0	0.0	1.7	0.0
Students	23.1	2.6	0.9	1.3
Miscellaneous	7.7	2.0	12.0	4.6
At home	0.0	9.2	0.0	14.5
No occupation	2.6	0.0	2.6	0.0
Occupation not known	3.4	2.0	21.4	13.2
Deceased	3.4	1.3	1.7	4.0

The Elyria Survey, reporting on 51 boys and 97 girls graduating in 1915 and 1916, finds that the percentage distribution

on the basis of occupation within a year or two after graduation is shown in Table XXXIX.

In the spring of 1917 forty-six boys who entered the Elyria High School in the fall of 1913 but had left school were distributed as shown in Table XV.

TABLE XV

THE OCCUPATIONS OF ELYRIA, OHIO, HIGH-SCHOOL GRADUATES, 1917

	PERCENTAGE
Agriculture	10.9
Trade	26.1
Industry	39.1
Transportation	10.9
Bell boy	2.2
Unknown	8.7
Loafing	2.2

Thirty girls of the same group who had left school were distributed as shown in Table XVI.

TABLE XVI

THE OCCUPATIONS OF ELYRIA, OHIO, GIRLS WHO LEFT SCHOOL BEFORE GRADUATING

	PERCENTAGE
Industry	10.0
Telephone operator	26.6
Clerical work	30.0
Nurse	3.3
At home	20.0
Married	6.7
Unknown	3.3

These studies are valuable in helping to define our knowledge of the sort of life-work in which high-school students will engage, but they are limited in two important ways. They do not keep track of the individuals long enough for us to establish their eventual status; and the classifications employed (agriculture, business, industries) are too general. Agriculture may mean that a person operates a farm worth \$50,000 and employs ten

men or that he is a farm laborer; business may mean an errand boy or a bank president.

An attempt has been made to overcome these limitations by searching for representative high schools which have published or unpublished lists of their alumni for many years back and which report occupations in detail. Information from the following institutions seemed especially suited to our purpose: The Ottawa Township High School, Ottawa, Illinois; data for the classes from 1878 to 1914. The Labette County High School, Altamont, Kansas; data for the classes from 1896 to 1915. The Atchison County High School, Effingham, Kansas; data for the classes from 1892 to 1916. The Pontiac Township High School, Pontiac, Illinois; data for the classes from 1895 to 1916. The Gouverneur Schools, Gouverneur, New York; data for the classes from 1888 to 1915. The Auburn Academic High School, Auburn, New York; data for the classes from 1868 to 1906.

We have collated the facts for graduates from 1892 to 1901 (1895 to 1901 for Pontiac and 1896 to 1901 for Labette County) and also for graduates from 1902 to 1911 (1902 to 1906 for Auburn). The former group represents graduates most of whom had more than ten years after graduation in which to establish themselves in life and deserves special attention.

The occupations mentioned are given in full, partly because these details give a concrete sense of the work of high-school graduates and partly to permit the reader to classify them as he wishes. They are also classified into groups. The detailed lists presented in Tables XVII and XVIII show that the high-school graduates of 1892 to 1901 engaged in the main in the top quarter of the country's work as rated on the basis of desirability and importance. In Table XVII the ninety-nine cases labeled "business" are all from two schools, Ottawa and Auburn; and the more detailed records of the other four schools show that only a very small percentage of these ninety-nine are engaged as porters, drivers, and the like. Even if we regard the "unknowns" as much inferior to the "knowns," and estimate the number of "farmers" who are really farm laborers very generously, we have out of 466 males, only 41 who may be doing work below the level of a stenographer, salesman, or electrician (3 in Army and Navy, 6 in the factory group, 9 out of 33 farmers, 1 lumberman, 2 out of 7 in the manufacturing group, 8 out of 99 in business, and 12 out of 24 unknowns).

TABLE XVII *

PERCENTAGE DISTRIBUTION, ON BASIS OF OCCUPATION, OF MALE GRADUATES
FROM SIX HIGH SCHOOLS

	1892- 1901	1902- 1911
Artist, 1, 0; architecture, 2, 1; cartoonist, 1, 0; chorister, 0, 1; music, 1, 2; music teacher, 0, 1; stage, 1, 0 . . .	1.3	0.8
Accountant, 1, 1; auditor, 2, 0; banking, 14, 2; bank cashier, 3, 4; bank solicitor, 1, 0; city treasurer, 1, 0; post-office inspector, 1, 0; postmaster, 2, 2; registrar, 2, 0; county treasurer, 0, 1	5.8	1.5
Army, 1, 0; Navy, 2, 1	0.6	0.2
Advertising agent, 0, 1; business, 99, 131; book business, 2, 0; business manager, 0, 1; druggist, 4, 3; hardware, 0, 3; insurance, 0, 1; jeweler, 0, 1; lumber dealer, 1, 0; music dealer, 1, 0; manager of coal office, 0, 2; manager of grocery depot, 2, 2; manager farmer's elevator, 0, 1; manager of show, 0, 1; real estate, 6, 4; merchant, 4, 7; salesman, 6, 4; shoe dealer, 0, 1; shoe salesman, 0, 1; traveling, 1, 0	27.0	24.7
Clergyman, 11, 3; dentistry, 6, 2; editor, 5, 0; education, 18, 4; entomology, 0, 1; journalism, 5, 3; law, 57, 14; medicine, 19, 5; missionary, 1, 0; pastor, 1, 0; pathology, 1, 0; principal of school, 0, 1; physical director, 0, 1; physician, 17, 5; professor, 1, 1; student, 1, 105; superintendent of schools, 2, 2; teaching, 7, 37; Y.M.C.A., 3, 1	33.3	27.9
Chemistry, 2, 5; civil engineer, 7, 7; engineering, 14, 9; electrical engineer, 1, 1; mechanical engineer, 1, 1; mining engineer, 0, 3; architectural engineer, 0, 1 . .	5.4	4.1
Draughting, 2, 2; electricity, 2, 9; forestry service, 0, 1; inspector (meat and dairy), 2, 0; machinist, 2, 2; painter, 0, 1; pharmacy, 2, 5; plumbing, 1, 1; photography, 3, 0; telegraphy, 1, 0; surveyor, 0, 1	3.2	3.3
Bookkeeping, 7, 9; billing clerk, 0, 1; cashier, 1, 2; clerking, 11, 20; drug clerk, 0, 1; government clerk, 0, 1; groceryman, 0, 1; mail clerk, 3, 8; postal service, 1, 0; Santa Fe official, 0, 1; stenographer, 1, 14; secretary, 1, 0; railroad employee, 4, 1	6.2	8.9
Factory, 1, 1; chauffeur, 0, 1; deliverer, 0, 1; mail carrier, 1, 3; mechanic, 4, 1; work in lumberyard, 0, 1; working for coal company, 0, 1	1.3	1.4
Farming, 33, 77	7.1	11.6
Lumberman, 1, 3	0.2	0.5
Manufacturing, 7, 2	1.5	0.3
Agricultural agent, 4, 2; internal revenue officer, 1, 0; osteopath, 1, 0; tailor, 1, 0; United States mail, 2, 4; undertaker, 0, 1; veterinary, 0, 1	1.9	1.2
At home, 0, 3	0.0	0.5
Not stated, 23, 83; unknown, 1, 6	5.1	13.4

* The wording of the original is followed in the list of occupations. The numbers after each occupation are the actual occurrences, the first being for the decade 1892 to 1901, the second for the decade 1902 to 1911. The totals are: 1892 to 1901, 466; 1902 to 1911, 664. The numbers in the columns at the right are percentages of the total. Thus, of the graduates from 1892 to 1901, 1.3 per cent are artists, architects, etc.; 5.8 per cent are accountants, auditors, etc.

TABLE XVIII *

PERCENTAGE DISTRIBUTION, ON BASIS OF OCCUPATION, OF FEMALE GRADUATES FROM SIX HIGH SCHOOLS

	ALL WOMEN		UNMARRIED WOMEN	
	1892-1901	1902-1911	1892-1901	1902-1911
Artist, 0, 2; music, 7, 10; musician, 1, 0; music teacher, 6, 4; stage, 1, 0; supervisor of music, 1, 0	1.9	1.5	3.8	2.5
Business, 80, 63; abstract office, 1, 0; music dealer, 1, 0; deputy register of deeds, 0, 1; superintendent, 0, 1	9.5	6.2	19.4	10.3
Bookkeeper, 13, 16; clerk, 13, 15; office work, 0, 1; private secretary, 2, 1; postal clerk, 0, 2; saleslady, 1, 2; secretary, 0, 1; stenography, 24, 37; assistant postmistress, 1, 0	6.3	7.1	12.8	11.9
Chautauqua system, 0, 1; education, 197, 22; librarian, 5, 5; married teacher, 3, 4; student, 3, 70; settlement work, 0, 1; teaching, 44, 204	18.9	29.3	38.4	48.7
Nursing, 6, 12; married nurse, 1, 0; osteopathy, 1, 0; pharmacy, 1, 0	1.0	1.1	2.1	1.9
Dressmaking, 2, 1; millinery, 1, 1	0.3	0.2	0.7	0.3
Domestic, 0, 1; housekeeping, 2, 0	0.2	0.1	0.5	0.2
Machine operator, 1, 0	0.1	0.0	0.2	0.0
Married, 437, 417	50.9	39.8	—	—
At home, 36, 94; in Japan, 1, 0; unemployed, 34, 18	8.3	10.7	16.8	17.7
Not stated, 18, 34; unknown, 4, 7	2.6	3.9	5.2	6.5

* The numbers after each occupation are the actual occurrences when all women are included, the first being for the decade 1892 to 1901, the second for the decade 1902 to 1911. The totals are: all women, 1892 to 1901, 859; 1902-1911, 1,048; unmarried women, 1892 to 1901, 421; 1902 to 1911, 631.

Let the reader arrange the occupations of the 1892 to 1901 male graduates along a scale of seven units in which one represents an unskilled day laborer; four, a blacksmith, carpenter, mason, or plumber; seven, a doctor, lawyer, engineer, or operator of an industrial or commercial plant with an income of \$3,500 or more. Two and three represent equal steps between one and four. Five and six represent equal steps between four and seven.

Distribute the "farmers," "unknowns," and other doubtful cases as seems just. It will probably be found that more than one-half of the male high-school graduates will be placed in the two highest compartments, and more than four-fifths of them in the three highest. The occupations of the women may be similarly distributed by using a scale in which one represents an unskilled laborer, a dish washer or factory hand of low grade; four, a clerk or typist; seven, a teacher in high school or an operator of a store or shop with an income of \$2,000 or more. This procedure will probably result in placing nearly three-fifths of the unmarried women graduates in the two highest compartments and nearly nine-tenths of them in the three highest.

High-school graduates (male) have over ten times their quota in the professions. According to the census of 1900, in the general male population twenty-five to thirty-four years of age there were just about as many draymen, hackmen, and teamsters as there were in the four professions plus journalism and dentistry; but among the high-school graduates there were possibly one-sixtieth as many. Among women in general of the ages twenty-five to thirty-four, dressmakers and milliners outnumber teachers considerably, but among the high-school graduates teachers are about fifty times as numerous as milliners and dressmakers together.

The life-careers of non-graduates cannot be pictured with surety. We have been unable to find records save those quoted from Koons and the Elyria Survey and those given in Table III comparing graduates and non-graduates of the Northeast High School of Philadelphia, a school of rather special nature and history. The one fact which is certain is that the non-graduate takes, in respect to occupation, a position intermediate between the graduate and the person who has not attended high school.

From both the details and the grouped results shown in Table XIX,¹¹ it is obvious that, with any reasonable distribution of the "unknowns," and the non-graduates will be relatively less frequent than the graduates in the more dignified and important occupations and more frequent in those less dignified and important. This is shown also by the data quoted from Koons and the Elyria Survey.

¹¹ These facts are compiled from the *Catalog of the Northeast High School, Philadelphia, 1912-13*, and the *Handbook of the Alumni Association of the Northeast Manual Training High School, Philadelphia, 1913*.

TABLE XIX¹²

PERCENTAGE DISTRIBUTION, ON BASIS OF OCCUPATION, OF GRADUATES AND NON-GRADUATES OF THE NORTHEAST HIGH SCHOOL, PHILADELPHIA, 1893-1911

	GRADUATES	NON-GRADUATES
Actors, 0.0, 0.2; artists and designers, 3.2, 0.7; engravers, 0.2, 0.4; musicians, 0.3, 0.4	3.7	1.7
Accountants, 0.6, 0.4; bankers and stockbrokers, 1.1, 0.5; builders, 0.9, 0.4; contractors, 0.8, 0.2	3.4	1.5
Architects and architectural draughtsmen	3.2	.9
Advertising solicitors and writers, 0.5, 0.7; commercial travelers, etc., 3.0, 7.3; insurance agents, etc., 1.4, 1.1	4.9	9.1
Brewers, 0.3, 0.2; druggists, 0.6, 0.9; manufacturers, 2.7, 2.0; merchants, 1.7, 2.4	5.3	5.5
Bookkeepers, 2.7, 2.0; clerks, etc., 5.3, 8.2; private secretaries, 0.3, 0.5; stenographers, 0.8, 0.0	9.1	10.7
Chemists, 1.7, 0.4; engineers, 8.8, 2.4	10.5	2.8
Clergymen, 0.4, 0.2; dentists, 1.1, 0.4; journalists, 1.5, 0.4; physicians and surgeons, 2.7, 0.9; teachers, 2.4, 0.4; consuls and lawyers, 2.3, 0.7	10.4	3.0
Draughtsmen, 8.6, 3.5; decorators, 0.8, 0.4; electricians, 5.3, 0.2; instrument makers, 0.8, 0.0; jewelers, 0.1, 0.2; machinists and pattern makers, 1.5, 0.9; photographers, 0.6, 0.0; surveyors, rodmen, and transitmen, 2.1, 0.7	19.8	5.9
Osteopaths, 0.0, 0.4; veterinary surgeons, 0.1, 0.4 . . .	0.1	0.8
Plumbers, 0.4, 0.7; printers, 0.5, 0.9; tailors, 0.1, 0.0 . .	1.0	1.6
Students	15.7	1.5
Supervisors, 0.4, 0.0; superintendents, foremen, and managers, 1.9, 5.1	2.3	5.1
Other occupations and not reported	10.6	50.4

We have shown elsewhere¹³ that from 1890 to 1918 the percentage of children reaching a given age who go to high school has trebled and that the percentage of children reaching a given age who graduate from high school has increased even more. It seems unlikely that the enviable status shown for graduates in 1892 to 1901 in respect to occupations can be fully maintained now and in the future. To maintain it would require that the favored occupations be practically closed to all but high-

¹² The first number after each occupation is the percentage of living graduates; the second, the percentage of living non-graduates.

¹³ E. L. Thorndike, "Changes in the Quality of the Pupils Entering High School," *School Review*, XXX (May, 1922), 355-59.

school graduates. This may perhaps be taking place. The supply of high-school graduates is increasing so fast that any profession or reputable semiprofession may demand such. Even if it is not fully maintained—indeed, even if there is a considerable movement downward—the high-school graduates will still have a notably high occupational status; the correlation between amount of education and dignity of occupation will still be close.

Principles Derived from Discussions of the Social and Economic Make-up of the Secondary School. The social make-up of American secondary schools requires that the schools provide for the needs of pupils ranging as to population groups from common labor to professional service.

The selective principle still dominates secondary education.

The high school should make a stronger appeal to population groups which are now only beginning to think in terms of secondary education.

Sociological conditions warrant the planning of courses so that they will be of maximum value to pupils who pursue them for either short or long periods. The school can no longer afford to neglect the population groups which are less and less well represented each succeeding year of school.

Unfavorable economic conditions often restrict high-school attendance. This principle is supported indirectly by the studies of occupational representation in high school and by Holley's study of the relation between economic conditions and persistence in school. It is to be understood that certain pupils of the lowest economic strata sometimes overcome the handicap of poverty.

A heightening of parental education and an improvement of home conditions lead to a lengthening of children's stay in school.

The longer pupils go to school the "higher" the occupation which they will enter. High-school graduates enter relatively "high" occupations while non-graduates enter occupations which are intermediate between those entered by graduates and those who have not attended high school at all.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. What is the meaning of the word *universal* in the statement of the American ideal of education?
2. Why is a mere increase of secondary school attendance not a proof of the existence of universal secondary education?
3. Many children are eliminated from school before they reach the high school. Of the causes of elimination, which are due wholly or in part to the school? To sociological conditions outside the school? To the economic status of the children?
4. What causes of elimination are omitted from your discussion of question 3?
5. There can be no doubt that there is educational stratification of society in America. What are the active forces in the stratification?
6. To what extent is there a social stratification of education?
7. How do you account for the difference between the percentages of secondary school pupils from different occupational levels in different parts of the United States?
8. Construct a graph to show the occupational representation in different years of high school and in schools of different sizes.
9. If the size of all home libraries could suddenly be increased to a minimum of fifty standard books, what effects, if any, would follow so far as high school attendance is concerned?
10. To what extent are pupils eliminated from high school because of their uneducated parents?
11. Show by examples the distinction between the conditions which *accompany* school attendance and the conditions which *underlie* school attendance.
12. Compare in social and economic respects seventh-grade pupils with twelfth-grade pupils.
13. Compare the pursuits entered by high school graduates with those entered by non-graduates.
14. Evaluate the principles at the end of this chapter.

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CHAPTER VII

THE MENTAL EQUIPMENT OF SECONDARY SCHOOL PUPILS

Measuring mental equipment by academic success or failure. The mental equipment of secondary school pupils can be discussed readily in connection with their academic records and their scores on intelligence tests. Academic records have been the property of teachers from time immemorial, while standard indices of intelligence are among the most recent additions to their information about pupils. At the present time, therefore, certain teachers, owing to their conservatism, lack of familiarity with intelligence testing, or to a sincere belief that adequate testing of intelligence is impossible, hold that attempts to measure intelligence are productive of nothing save misleading data. Such a point of view has, however, become less and less tenable as devices for intelligence testing have become more and more highly refined.

Problems which have driven members of the teaching profession to the use of intelligence tests are raised in such articles as those which follow by Bliss, Rugg, and Brooks. For example, questions as to teachers' standards raise issues which demand objective measurements of both the general or native intelligence of pupils and their attainments in subject matter. Also, the perennial question as to the rate of mental development of school children is one which calls for standardized measurement of intelligence.

This chapter draws, therefore, upon accounts of the successes

and failures of pupils; the practical and theoretical issues involved in the grading of pupils' work; and the gradual development of mental powers; while Chapter VIII deals with the available means of appraising mental powers and the utilization of the results of mental measurement.

HIGH SCHOOL FAILURES¹

BY DON C. BLISS

The extent of non-promotion in the elementary school has occupied such a prominent place in educational literature during the past few years that school superintendents have to all intents and purposes reduced their practice to a standard. A study of annual reports indicates that the rate of non-promotion which commonly prevails in the elementary grades varies from 8 per cent. to 12 per cent. No such uniform standard is found in the high schools. Not only is there a wide divergence between different school systems but within the same high school even, departments are practically a law unto themselves. One department may report no failures while another in the same school may fail 50 per cent. of the pupils taking the subject. One or two studies of this question have been made which indicate clearly the necessity of establishing with some definiteness what constitutes a reasonable percentage of failure in high school classes.

In North Jersey a group of superintendents and principals who had formed an association for the study of educational questions selected this one as the subject for a recent meeting. Fourteen superintendents agreed to furnish duplicates of the promotion sheets of all classes for June 1915. These returns were tabulated by a seminar group in Teachers' College and the results charted in the office of the Superintendent at Montclair. By this plan all marks were reduced to a uniform basis and discrepancies eliminated so far as possible. The conviction of any individual as to a reasonable number of failures in mathematics could not be maintained in the face of the median failures for mathematics in all of the schools represented in the study. The returns were reduced to per cents., the basis each time being the number of marks given by the various teachers in the especial subject or

¹ *Educational Administration and Supervision*, III, 125-138. March, 1917.

subjects under consideration. The total number of marks tabulated was as follows:

Mathematics	4,811
Latin	2,420
History	3,206
German	2,632
Business subjects	5,434
English	6,392
Total	24,895

In the judgment of those making the study this group of six subjects involving over 24,000 marks was broad enough to establish any conclusion that might be reached with respect to the prevailing practice in any high school. The grouping was entirely arbitrary and was made in this form in order to reduce the labor of the necessary computations and the construction of charts. "Mathematics" includes algebra and geometry, while "business subjects" covers stenography, typewriting, bookkeeping, and others commonly grouped under this caption. Only those pupils who were members of the class in June were included. Those who had dropped from the classes during the year were not taken into consideration, this factor being left for a future study.

In making the tables each school system was represented by a key letter, A, B, C, etc., while the teachers were represented by numbers. When a letter had been assigned to a school, or a number to a teacher, the same letters and numbers were retained in all tables.

After the returns had been tabulated and reduced to a percentage basis, six sets of tables were made:

1. The total percentage of failure in all subjects, for each school.
2. The failures for each year of the high school course.
3. The failures for the fourteen high schools in each of the six departments.
4. The failures for the teachers in each department.
5. The distribution of marks in mathematics for each school, showing the percentage of A's, B's, C's, D's, and failures.
6. The comparative distribution of marks between two selected subjects, for several schools.
7. Percentage of total failures, failing in one or more subjects.

The general conditions with respect to high school failure are clearly reflected in this table: when the work in any school is

TABLE XX

TOTAL PERCENTAGES OF SUBJECT FAILURES IN FOURTEEN HIGH SCHOOLS

* SCHOOL	A	B	C	D	E	F	G	H	I	J	K	M	N	O
Percentage of Failures . .	18.2	17	16	20	11	16.2	12	8	27	14	8	16	13	8

so carried on that 27 per cent of the total marks given indicate failure, no argument is needed to prove the necessity of a careful study of the situation. If it is the direct result of an attempt to maintain a standard of scholarship which a large proportion of the students are unable to reach this standard should be adjusted to their capacity. It is more than probable that the average ability in one school system is practically the same as in every other high school, hence the indicated variation cannot be accounted for on the score of unequal mentality. Individuals may show a radical variation in capacity but the average of schools must be practically constant.

It is, of course, entirely possible that the fluctuation is produced by a difference in the quality of actual teaching in the classrooms or by the lack of motivation of the subject matter. The real cause can be ascertained only by a careful study of the existing conditions.

It may be charged, on the other hand, that the school showing 8 per cent. of failure is operating under a standard so low that the product is of inferior quality. While it may be true that the school suffers less from this policy than from the attempt to maintain an unreasonably high standard, the inevitable result is a lowering of its reputation. Parents have a right to expect that students are fully qualified to measure up to the demands which current opinion makes of high school graduates. The graduation certificate should represent a certain degree of attainment. Pupils who are certified as prepared for college work should be able to maintain a creditable position in the college which they enter. The reports made by college deans to the school afford incontrovertible evidence of its success or failure. If business men who employ graduates of the commercial course are satisfied with the proficiency of the boys and girls whom they take on the recommendation of the school, no arguments of would-be critics are worth a moment's consideration. It is a

question of fact, not of theory, and the facts are readily ascertained.

The following tables give similar information with respect to the four high-school classes.

TABLE XXI

SUBJECT FAILURES BY CLASSES — TEN HIGH SCHOOLS
PERCENTAGES OF FAILURES

SCHOOLS	B	C	D	E	G	H	I	J	K	M
Freshmen	19	19	34	13	17	12	31	19	10	18
Sophomores	19	20	19	14	10	10	33	16	9	17
Juniors	16	8	12	4	6	5	25	1	4	14
Seniors	4	9	11	5	2	3	9	0	4	7

In this table the outstanding fact is the steady decrease in percentage of failure from the freshman to the senior year. This large proportion of freshman failure is equally marked in all of the schools examined, and its universality indicates that it is probably unavoidable. It is only reasonable to suppose that some pupils will attempt the high school work even though nature has failed to endow them with the proper mentality to undertake it successfully. Students of this character soon realize their limitations, become discouraged, and drop out. The remainder, with a better mentality, are able to measure up to the demands of the school and complete the requirements. This conviction of the lack of ability to meet an arbitrary standard should not operate to prevent the high-school principal from using every effort to arouse such pupils to a realizing sense of their opportunities. Many of them can be saved to the school by allowing them to take special courses. Another reason for the diminution of failure as pupils progress through the school may be that teachers of the advanced classes are influenced, perhaps unconsciously, by a feeling that they are in duty bound to prevent the excessive mortality which prevails in the freshman class. The extent to which this factor operates cannot be determined by a study of this character.

Even though the same general tendency appears in all of the high schools, those who made the worst record in the first table are again the worst offenders. School system D, which according to Table XX failed 20 per cent. as a whole, fails in the freshman

year 34 per cent., while in the senior year but 11 per cent. fail, a net decrease of 23 per cent. School system K, making an excellent record as a whole, shows a variation of but 6 per cent. between the freshman and senior years. It is impossible to escape the conclusion that some high schools permit a greater variation than is necessary. A careful study of the whole situation, followed by a definite campaign to improve conditions would undoubtedly result in a lessened mortality.

TABLE XXII

PERCENTAGES OF FAILURES BY SUBJECTS
PERCENTAGES OF FAILURES

SCHOOLS	A	B	C	E	F	G	H	I	J	K	M	N	O
English . .	22	14	7	16	14	15	8	24	9	3	11	10	8
Latin . . .	26	20	20	13	20	16	10	23	26	18	15	10	14
German . .	22	26	29	1	27	6	8	26	23	13	16	15	17
Mathematics	21	27	15.5	13	26	12	18	36	14	22	31	20	9
History . .	14	8	5	13	11	11	8	30	7	6	12	13	7
Business . .	11.5	11	22	8	21	4	12	22	15	9	9	10	7

The wide variation within a school in the number of failures for the different subjects indicates a radical difference in the arbitrary standard of attainment demanded. Why a school like C should set up a standard in German that results in 29 per cent. of failure and should at the same time follow a practice in history that results in only 5 per cent. of failure is difficult to understand. It is impossible to escape the conclusion that either the standard in German is too high or that the requirement in history is too low. It is of course entirely possible that the teachers in the history department have succeeded in motivating the work to an extent not realized by the German teachers. Whatever the cause it seems clear that some reorganization in practice is demanded.

When we consider the record in a single subject in the different high schools a like variability appears. The maximum percentage of failure in English is found in School I amounting to 24 per cent. and the minimum in School K with 3 per cent. The extremes are equally pronounced in history, varying from a maximum of 30 per cent. to a minimum of 5 per cent. Mathematics, as an exact science, ought to show a more uniform practice but even here the extremes are too great, ranging from 36 per cent.

to 9 per cent. These variations cannot be accounted for by assuming a like difference in the abilities of the pupils represented. The average of the ability of all students in one school is practically identical with the average of the ability of those in another school, and if the methods of teaching and ideals of attainment are equal in the two systems the percentage of failures must be approximately equal.

A consideration of subject failure leads naturally to an analysis of each department to determine whether the different teachers concerned follow the same general policy.

The surface indications might lead to the supposition that a department was entirely satisfactory when as an actual fact the conditions were radically wrong. An abnormal number of failures in a single section might be entirely concealed by unusual efficiency on the part of the other teachers in that department. The German in school system F is an illustration of this situation. The department as a whole does not show enough failures to attract any particular attention, but when they are assigned to the different teachers the 45 per cent. of failure charged to one of them becomes conspicuous at once.

TABLE XXIII

VARIATIONS IN PERCENTAGES OF FAILURES IN THE SAME DEPARTMENT OF THE HIGH SCHOOL

RANGE OF PERCENTAGES FAILED BY DIFFERENT PUPILS

SCHOOLS	A	B	C	F	G	H	I	J	K	O
English . .	16-25	7-27	6-7	8-26	0-20	0-17	0-31	0-21	0-8	1-23
Mathematics	10-29.8	18-38	5-39.5	13-38	7-18	12-35	34-37	11-21	4-26	1-16
Latin . . .	24.5-30	17-29	20*	8-32.1	4-41	10-10	23*	26*	18*	10-17
German . .	13.5-32	12-33	12.5-33	17-45	0-20	6-9	22-41	23*	13*	1-13
History . .	6-15	4-12	5*	0-19	0	7-13	31*	7*	3-12	2-16
Business . .	8-19	9-37	22*	19-25	4*	5-19	4-30	6-22	9*	3-14

* Only one teacher.

In contrast to this situation H shows a uniform tendency that is most commendable. The system is large, requiring three teachers to meet the demand for German. A variation of 3 per cent. is no more than might be expected as a result of the unequal abilities of the pupils who make up the different sections. The variability in some schools is too large to be explained away by any such supposition and we are forced to conclude that in many

instances there should be a larger amount of directive influence from the department head, supplemented by occasional conferences of the teachers in the group.

Individuality of the members of the teaching force should be respected, but it ought not to be encouraged to such an extent that an impossible ideal of attainment is set up. If it is clear that the measure of attainment of the students in a given group warrants such a step it would seem to be a wiser policy to modify the requirements of the course of study sufficiently to enable more than 65 per cent. of the class to meet them. In doing this it may be necessary to increase the time allowance for the subject enough to prevent the standard of excellence demanded by the school from being undermined. In any event, it is impossible to justify a policy which gives forty or fifty per cent. of failures.

Of the eight school systems furnishing these data only one, J, distributes its marks in a scientific manner. In this high school the distribution curve is nearly ideal: the 14 per cent. of failure is balanced by 13 per cent. of A's. The maximum number falls at the central group C with the two groups on either side approximately equal. School C, on the other hand, has ten times as many failures as A's.

It is evident that the general policy of high schools is to guard the entrance to the A grade with jealous care probably because of the desire to restrict the college certificate privilege to a select group of students. It would be interesting to know whether the 13 per cent of A students in school J is representing the school worthily in higher institutions. If this large percentage in the A group has not resulted in lowering the standard to an unreasonable degree, it represents a condition tending to strengthen the school with the community. Justly or unjustly there is a strong tendency on the part of school patrons to estimate the efficiency of the high school on the basis of the marks given the students. The parents of the pupil who received an A grade invariably believe in the excellence of the high school. Conversely, parents of the boy who is marked a failure tend to place the blame upon the school. Consequently it is a politic thing for any school to award as many of the higher grades as it can without risking failure on the part of the student in his subsequent work. This is a policy that can readily be overdone as no temporary gain in local prestige will make up for a reputation of maintaining a low standard of efficiency. Truckling to patrons for the sake of their support is always unwise and such practices tend to defeat the

TABLE XXIV

PERCENTAGES OF FAILING PUPILS WHO FAILED IN ONE OR MORE SUBJECTS

SCHOOLS	PERCENTAGE WHO FAILED IN ONE SUBJECT	PERCENTAGE WHO FAILED IN TWO SUBJECTS	PERCENTAGE WHO FAILED IN THREE SUBJECTS	PERCENTAGE WHO FAILED IN FOUR OR MORE SUBJECTS
H	69	25.8	5	0
E	62	27	9	2
C	63	29	4	4
K	63	31	5	1
J	62	27	10	1
G	58	26	10	7
I	53	21	15	11

very ends they are supposed to serve, but there is no good reason for following a policy which harms the school simply for the sake of asserting independence.

It is important for the high school principal to know the failures in any given subject but it is equally important to know how serious the failure is. A pupil may fail in one instance but his success in other lines of work may enable him to go on with his class. Should he fail in several subjects he may be so handicapped as to make an additional year in the school necessary.

An inspection of Table XXIV shows that the majority of failures are in but a single subject. In school system H. for instance, 69 per cent of the total failures are below standard in a single subject only. School I has 53 per cent. below standard in one subject while 11 per cent. have failed in what must be their entire work.

Such a study as this is defective at a vital point: it fails to take into consideration any unusual condition which might account for the facts disclosed. Particularly is this true with respect to those data showing the percentage of failure by teacher. It is perfectly possible that the group under the instruction of a certain teacher during the particular year considered is so constituted that a high percentage of failure is inevitable. Given a more select group the very same teacher might have made an entirely creditable showing. This criticism is not equally valid for total failure or failure by subject: here the conditions are more constant and the facts disclosed are due to the fundamental policy pursued by the school. Presumably the same condition would have appeared had any other year been selected for the

study. Before any final conclusion with respect to individual teachers can be reached a similar study for one or two other years would need to be made. If such studies should show the same tendency year after year, the inference with respect to teachers would be as conclusive as it is now with respect to school systems.

TEACHERS' MARKS AND THE RECONSTRUCTION OF THE MARKING SYSTEM²

BY HAROLD O. RUGG

During the past ten years it has been increasingly evident to school men that one of the contributory causes of "failure" in the public schools has been a bad administration of the marking system. By and large in this country we fail 20 per cent of our student population. Furthermore it is relatively common, in many of our high schools at least, for teachers to fail upward of 30 per cent of their students. Recognizing that some of the difficulty may be traced to the inability of the pupil, that some of it clearly may be ascribed to a badly adjusted course of study and some of it to inefficient teaching, nevertheless there remains for the careful consideration of administrators and teachers the reconstruction and better administration of the marking system.

For just about ten years there has been much agitation in the educational press over the standardization of school marks. More than sixty articles have appeared in our various journals discussing the many phases of this problem. In 1915 the writer summarized the literature, finding at that time 39 references which dealt rather directly with the problem of the standardization of teachers' marks.³ Since that time no systematic summary has appeared which presented the essence of educational thought on this question or which reviewed the literature. It seems clear, therefore, that there is a need for a complete statement of present scientific thought on the matter and for the setting forth of a thoroughgoing program for the reconstruction of the marking system in our public school. This article, therefore, is written with these three aims in view: to summarize the results of recent investigations, to present complete bibliographic

² *The Elementary School Journal*, XVIII, 701-719. June, 1918. Abridged.

³ Rugg, H. O. "Teachers' Marks and Marking Systems," *Educational Administration and Supervision*, I (1915), 117-42.

material, and to present systematically the essence of current thinking on the problem.

I. *The marking system needs to be reconstructed.* Out of the discussion of the last fifteen years we find one point of absolute agreement, namely, that we should overhaul thoroughly the methods by which we measure the outcome of instruction in the public schools. There are three very apparent reasons for this statement: (1) the striking *variability* in teachers' marks; (2) the *unreliability*, the lack of consistency, with which teachers mark; (3) the *inconsistency in the way in which teachers distribute their marks*.

1. *The variability of teachers' marks.* Of the 23 articles which have appeared in the past three years nearly every one presents evidence showing the striking variability in the marking of teachers. Various investigations have been reported showing the percentages of A's, B's, C's, etc., given by teachers in different systems of schools, within the same system, and within the same department. Investigations reported by Chapman and Hills⁴ are distinctly to the point in this connection. They show, for example, in their study of the distribution of college grades the very wide variability with which instructors even within the same department assigned the various marks of the marking scale. One instructor, for example, in several years of marking gave 400 per cent more E's than another instructor.

2. *The unreliability of teachers' marks.* In the same way it has become apparent to school men that teachers unaided by any objective scale will vary greatly in their judgments of the *same* student work. There are many investigations which establish this point clearly. Inglis,⁵ for example, in a recent article shows that of 122 high-school teachers marking an examination paper of 10 questions in plane geometry 20 per cent gave an *equal* value (10 per cent) to each question. Of the others the range in the value assigned to the various questions was from 0 per cent to 25 per cent and the average deviation was 2.4 per cent. Inglis also shows, by having the question answered by pupils who had

⁴ Chapman, J. Crosby, and Hills, Myra E. "A Statistical Study of the Distribution of College Grades," *Pedagogical Seminary*, XXIII (1916), 204-10.

⁵ Inglis, Alexander. "Variability of Judgments in Equating Values in Grading," *Educational Administration and Supervision*, II (1916), 25-31.

completed plane geometry four months before, that the relative difficulty of the 10 questions ranged from 10 to 298 points. Likewise in testing students on an algebra examination certain questions which had been marked as of equal value as others were found to be 15 and 16 times as easy as the others when worked by students. Furthermore as one studies the marks given by a teacher to the same piece of student work presented at successive times he finds even here distinct evidence of unreliability of marking. Studies referred to in the writer's previous article show clearly the following:

Under such individualistic marking systems as are in use today teachers' marks do vary widely—there are large individual differences in teachers' marks of the same students in the same subjects, on the same examination papers and the same drawings and lettering samples. The mean variations in many instances tested run as high as 15 per cent. They practically never are less than 5 per cent. Steele found the mean variation of eight markers on the same examination replies to vary from 2.5 per cent to 8.1 per cent. Starch found mean variation among instructors in the same department marking English papers to be 5.4 per cent. According to Starch and Elliott the probable error (almost the same as the mean variation in these cases) of 142 high-school teachers marking the same English paper was 4.5 per cent; the same geometry paper, 7.5 per cent; the same history paper, 7.7 per cent; 50 per cent of the marks were separated by more than 9 per cent. The present writer (1914) found a mean variation for teachers of lettering marking the same 20 samples of 8.6 per cent, and among students trained in lettering of 11.4 per cent, both groups never having seen an objective scale in lettering.

Starch and the present writer each found the variation in marking to be as large within any one department as that among departments and schools. Starch established a mean variation of 2.2 per cent in any one teacher's marking of the same paper. He attempts to determine the relative amounts contributed to the total variability by the various factors affecting it. He concludes that the total difference in marking is due to differences in standards among schools, among teachers, in the same school or department, to inability to distinguish small differences in quality of school product, and to the change in an instructor's own standards.

The minimum size of the marking unit. From the results of three of the four investigations bearing on this question of the

size of the marking unit we may conclude that teachers, marking without an objective scale, cannot be expected to mark student work in any subject—mathematics, history, composition, lettering, etc.—within an interval of roughly 8 per cent.

3. *Inconsistency in the way in which teachers distribute their marks.* A third type of evidence may be exhibited in showing the need for reconstructing the marking system. Not only do teachers' marks vary between themselves and within the same department, not only are they inconsistent as measures of the *same* student work, but also when they are distributed along the scale of ability we find that the shape of the distributions for different systems, for different schools, for different departments, and for different teachers is distinctly inconsistent. One teacher or school fails 30 per cent and the marks may be piled up at the low end of the marking scale. Another teacher or school gives 30 per cent of the student body marks of "excellent," or 90, etc., thereby humping up the marks at the high end of the scale. From detailed study of hundreds of mark curves it may be said that it is possible to find all forms of distribution of marks, from the form in which the marks are heavily "skewed" to the high end of the scale to the form in which the marks are piled up at the low end of the scale. There is, however, enough evidence that teachers' marks tend to be "skewed" to the high end of the scale. In the writer's previous article were presented typical distribution-curves covering more than 171,400 teachers' marks collected from 7 colleges and universities and from 39 high schools. These data certainly typify the actual condition of marking throughout the country, and conclusions made from them ought to hold for teachers at large. We may summarize the conclusions of the previous report thus:

Regardless of subjects of study, the typical distribution of teachers' marks results in a form or curve which may be described as skewed to the high end of the percentile scale, i.e., the peaks of the curve will lie considerably above the mean of the base line upon which the curve is plotted and above the theoretical mean of the normal frequency-curve plotted on that base.

Less than 10 per cent of the several hundred mark curves, representing an aggregate of over 171,400 marks, may be described as perfectly symmetrical, and not more than two or three in a hundred of all those examined have been found to be approximately "normal."

The mark curves of students of advanced high-school classes

are skewed much farther to the high end of the percentile scale than are the mark curves of students in corresponding elementary classes.

There is evidence that another potent cause of the skewing is the presence of institutional "critical points" in the marking scale, e.g., the "passing" and "exemption" grades are almost always found to play an important rôle in shaping the mark curve.

II. *Why are teachers' marks variable and inconsistent?* To answer this question we proceed at once to the crux of our problem. Teachers' marks are variable and inconsistent primarily because *teachers* in marking pupils *do not measure the same trait*, secondarily because teachers *do not have a common scale* for the evaluation of definite amounts of the traits measured; i.e., their marks are distributed on a purely subjective basis and their standards are not uniform. It is not possible to secure from a group of twenty-five school people from twelve to fifteen different statements as to *what* is measured by school marks. It is impossible, furthermore, to establish exactly the same connotation in the word-statements of any two teachers. Camp⁶ found, for example, in canvassing this situation with his teachers that teachers said that they—mark "improvement," "ability," "seriousness," "purpose," "moral qualities," "interest in work," "equipment." The English department, for example, marks "conscientious work," "improvement and ability," while the commercial department marks "accuracy," "neatness and promptness," "honesty," "courtesy," and "seriousness." The history department marks "endeavor and improvement."

III. *What is measured by teachers' marks?* To provide a foundation for a clear discussion of this problem we shall do well to distinguish three different traits in our student population. Let us call them for convenience *inherited capacity*, *ability-to-do*, and *specific performance*. The writer has canvassed the more than sixty articles which have appeared during the past fifteen years and found these three traits apparently fairly distinguishable among the score or more that are in the minds of teachers. With the recent development of the measuring movement, of which standardization of teachers' marks is merely a

⁶Camp, Frederick. "Some 'Marks': An Administrative Problem," *School Review*, XXV (December, 1917), 697.

phase, there has come a general acceptance of the distinction between these three traits.

It is helpful to think of pupils as we meet them in public-school classes as being distributed over three different kinds of scale: one a scale which represents varying degrees of *inherited capacity*, another a scale which represents varying degrees of *ability*, and a third a scale which represents varying degrees of efficiency in *specific performance*.

Now the term *inherited capacity* practically defines itself. By it we mean the "start in life"; the sum total of nervous possibilities which the infant has at birth and to which, therefore, nothing that the individual himself can do will contribute in any way whatsoever. No one fact that has come from the study of heredity is of more importance to teachers than this fact that the capacity of an individual is determined by the "third and fourth generations" and not by anything that he himself can do. An important corollary to this statement is that an individual has a given place on the capacity scale and that only a combination of the most favorable conditions of training and work can operate to bring him to a point equally high on the ability scale. Obviously, since capacity has to do with the "start in life," in the public schools we *do not measure capacity*.

Now educational conditions (as found in the home, in the neighborhood, in the kindergarten, on the playground, in the "gang," in church, in the Sunday school, etc.) operating on "capacity" develop what we shall call "present-ability," the "*ability-to-do*," which is present at any given time. If the educational conditions are favorable, then the position of an individual on the *ability* scale will approximate his true position on the *inherited-capacity* scale. Curtis has defined capacity as "potential-ability." To express more clearly what we mean by *ability* let us discuss *specific performance*. If an individual's presentability is his ability-to-do, then by an individual's performance we mean what he does, i.e., his *specific performance* at work. We mean, for example, the recitations that he makes, the examination papers that he writes, the machine part that he constructs, the theme that he writes, the problems that he solves, etc. *It is these specific performances of children that we measure* in school practice. It is these that school marks *ought* to measure. And it is from the sum total of these that we *estimate ability-to-do*. To reiterate an important fact, we *do not measure ability*, we *estimate it from mere performances*. An illustration will make this fact still

clearer. If we give a test to measure skill in a particular school activity (such as, for example, the removal of parentheses in algebra) to a pupil five times in succession, on successive days, his specific performances may be as indicated herewith. On one day, for instance, he works in one minute 18 examples, on another day 11, on another 24, on another 19, and on a fifth 16.

There are *two important characteristics apparent in the performances of school children*. The first shows us that *specific performance is unstable* and that any *one* test does not enable us to estimate accurately the *ability* of a given pupil. The variation of this particular pupil from 11 to 24 problems a minute illustrates the variability or instability of pupils' specific performances. Furthermore it determines our attitude toward the use of performance as guides for formulating judgments on their ability-to-do. Now the second important characteristic of a pupil's performance, and one which bears upon our question still more intimately, is that the *average of successive performances is relatively stable*. For example, in the illustrations given the average of the first two performances is 14.5, the average of the first three is 17.67, of the first four 18.0, and of the first five performances 17.60. In other words, the averages of three or more successive performances are practically stable or constant, although the individual performances vary greatly in amount. Thus it is clear that just as capacity is *potential-ability*, so *ability-to-do* may be helpfully described as the *average of a few successive performances*. Furthermore it is helpful for teachers to recall that experimentation is showing that but a very few successive performances, say three, or four, need to be measured on an individual pupil to permit a close estimate of his *ability*.

We may sum up this discussion, therefore, by pointing out that if an adequate method of measuring the specific performances of pupils can be devised then the chaotic condition which is apparent in our marking terminology can easily be cleared up. Interest and effort, moral qualities, attitude, etc.—all these intangible qualities contribute to the *specific performance* of the pupil and result in making possible an estimate of his total *ability-to-do*. Thus, in résumé, teachers' marks ought to measure *ability-to-do*, this in turn having been estimated from the specific performances of the pupils. We shall point out later that this estimate will be valid as we substitute objective methods for our present subjective methods of measuring ability.

IV. *How does ability distribute in the general population?* Teachers' marks, if they are adequate measures of ability, ought to distribute over the ability scale in approximate conformity at least to what is known about the distribution of ability, in the general population. Hence the very evident need for making use of a theoretical distribution of teachers' marks against which to check our judgment on ability as it is represented in our school classes. An extensive literature has developed concerning the form of the distribution of human traits. It has been referred to by many writers on teachers' marks and ⁷ has been presented in summary fashion in a number of sources. For this reason and because the writer is distinctly limited in space in the publication of this article our statement here will be very brief and seemingly dogmatic. The evidence for the statement, however, has been set forth in other writings.

The types of fact made use of by those who would standardize the marking system through the use of theoretical distribution-curves include the following: both physical and mental traits (and it is believed likewise moral traits) are found to fit reasonably well for purposes of practical application in education a mathematical curve known most commonly as the normal probability-curve. The arguments and the evidence adduced in the investigations of the past ten years lead us to believe that such a distribution-curve is reasonably adapted to either an elementary- or a secondary-school population. Granting, therefore, that we need to refer our judgment of scholastic ability to some theoretical distribution-curve and accepting this particular normal curve as a satisfactory type, we have three subordinate problems before us: (1) the determination of the number of divisions on the marking scale, (2) certain statistical points involved in the determination of the length of the scale, and (3) the determination of the number in individuals that ought to fall in the various divisions of the marking scale.

V. *Number of divisions used in the marking system.* In the previous article of the writer the recommendations of 9 investigators were shown with the proposed percentages for each of the divisions of the scale. At that time it was shown that all

⁷ For example, the reader will find a detailed statement of the statistical methods underlying the use of curves representing the distribution of human traits in the writer's *Statistical Methods Applied to Education*, chap. viii.

but one of these investigators recommended a five-division marking scale with the use of letters A, B, C, D, E; of words such as "excellent," "superior," "medium," "inferior," and "poor"; and in many cases of parallel percentile limits on the marking scale. Nicolson has recently collected the practices of 64 colleges approved by the Carnegie Foundation. He finds that 36 of these colleges use a five-division marking scale and that among the others there is almost no central tendency. Some colleges use as few as 3 groups and others as many as 12 and 15. A large number generally accompany the use of A, B, C, D, etc., with the use of plus and minus signs. Furthermore it is shown that it is relatively common at the present time in the administration of college marking systems to translate letter marks into percentile limits on a numerical scale. For example, A=90-100, B=80-90, etc. We may sum up the situation for our colleges and high schools by pointing out that there is a fair agreement upon a five-division marking scale. We have already quoted the various suggestions made in the previous article concerning the minimum size of the unit in the marking scale. This confirms our judgment that five divisions can be handled accurately by teachers.

VI. *Percentage of individuals theoretically falling in each division.* Dividing up the marking scale, therefore, into five parts we are concerned to know what proportion of human beings should be found in each of the various divisions of the scale. Without introducing a technical discussion of the statistics of the probability-curve let us say that one can obtain these facts from tables which have been constructed showing the percentages of the total area of the curve which fall between various points on the base line. A complete discussion of this matter can be found in the reference previously given. To apply the normal probability-curve rigidly to our problem would lead to a statement that if we use a five-division marking scale the percentages of pupils that ought normally to be expected in each of the groups would be either 7, 24, 38, 24, 7, or 3.5, 24, 45, 24, 3.5, depending upon whether one breaks off the base line of the normal curve at $2\frac{1}{2}$ or 3 times the standard deviation (the latter being used merely as a unit with which to divide the base line of the curve). It is clear, however, that a sane recommendation concerning the use of a theoretical curve will lead to the statement that a percentile distribution of pupils in five divisions ought to

approximate, but not necessarily to follow rigidly, any specific set of percentages. In other words, the writer would prefer to say that one would expect to find from 5 to 10 per cent A's, 20 to 25 per cent B's, 35 to 40 per cent C's, 20 to 25 per cent D's, and 5 to 10 per cent E's in each reasonably *large* group of our public-school pupils (say 100 or more). Furthermore that this device ought to be used merely as a rough check upon the total distribution of marks in various divisions of the scale for large numbers of our students and not for single classes. After assigning one's marks in a given semester the use of such a device is very helpful in making one critical of the accuracy with which he has distributed his marks.

VII. *The recent use of the normal curve in distributing marks in schools and colleges.* The literature of the past three years has revealed a number of active attempts by school and college administrators to standardize the marking system through the use of a theoretical distribution. The aim in general is to cut down the variability with which teachers mark, so as to make their marks consistent in form of distribution with the abilities which they are supposed to measure. Superintendents are beginning to report systematic endeavors to get teachers to distribute their marks in rough accordance with the normal curve. A number of these attempts have made use of a five-division scheme which shows the following percentages: 5, 20, 50, 25. An article reported by Superintendent Walls, of Kent, Ohio, presents data illustrative of the success attained by school administrators in changing the distribution of teachers' marks from the badly "skewed" form which we commented on earlier in the article to one more closely approximating symmetry. To illustrate concretely the results of such adjustments in administration we quote from one of his tables which gives the percentile distribution of marks for five successive semesters under both his old system and his new one.

VIII. *The need for clear word-descriptions of "ability" in our marking system.* These proposed reforms have to do with the general adequacy, with the general validity, of the teacher's measurement of pupil-ability. Thus far the workers in this field have proposed the standardization of the marking system primarily through the use of theoretical distribution-curves which are believed to represent the distribution of ability in the general

TABLE XXV

HIGH-SCHOOL MARKS

SUMMARY OF GRADES OF SIX TEACHERS. PERCENTAGE OF GRADES ASSIGNED TO EACH RANK

YEAR	PERCENTAGE				
	Below 60 V. P.	60-74 Uns.	75-84 F.	85-94 G.	95-100 Ex.
1911-12	0.8	5.9	21.4	56.1	15.8
1912-13:					
First semester	0.8	12.1	39.6	42.5	5.0
Second semester	1.1	12.0	43.6	38.0	5.3
1913-14:					
First semester	3.0	13.0	42.0	36.0	8.0
Second semester	4.0	12.0	39.0	38.0	7.0

population. What we have done in the movement up to date is to translate our desire for scale measurement in marking pupils into a system of numbers, or into a system of letters, without defining clearly what the letter or number represents. Now in the practical adaptation of a marking scale either letter or numerical, an important consideration faces the administrator: how shall various degrees of *ability-to-do* in school children be defined?

It seems quite clear that neither the number nor the letter has carried a common meaning to the student, to the teacher, and to the administrator alike. We must not forget that these three groups, students, teachers, and administrators, have to "think together" concerning school marks, and our aim is to build a marking system simple and economical to administer, and yet one which will enable these three sets of minds to agree on the marks to be put on the results of instruction. Now the common avenue of communication is words. We think together only when we use words in communicating, about whose connotation there is no doubt. Hence in our practice of using letters and numbers we have forsaken a worded system of measures or marks and have made use of a set of letters, or, worse still, a set of numbers whose meaning has not been interpreted in commonly used words. Hence the differences in interpretation; hence the bickering about 79, 78, 81, 80, etc.; hence the ridiculous, yes, criminal practice of failing children at 69 or 68 when the passing mark is 70!

If this is one of the chief causes of our marking difficulties the

ultimate remedy stands out clearly: *substitute clear word-statements for abstruse literal and numerical symbolism*. First, the marking system for each subject of study should consist of a set of word-descriptions of "ability" for various grades of students; secondly, these statements, these standards, should be expressed in words common to the thinking of pupil, teacher, and administrator; thirdly, they should be brought to the attention of each group constantly enough to result in thorough acquaintance with the marking standards and in relatively accurate use of them. That is, they should be printed, charted, and placed before teacher and pupil constantly. If not in the textbook, then in charts on the walls of the classroom, in printed statements to be pasted into the textbook, in printed folders to be sent home to parents. Instead of being told that John's mark is 79 in mathematics or 92 in English, pupils and parents alike should be told that John's mark represents the ability to do such and such things, to write equal to 60 on the Ayres scale, to spell successfully a given proportion of the eighth-grade words in such and such a list, etc. Definiteness of understanding on the part of all concerned should be the outcome of the setting up of such standards. It is a difficult thing to do, this writing out of word-statements of degrees of ability. It is, however, one of the most important co-operative tasks of teacher and administration.

IX. *The importance of "ranking" pupils in order of ability.* There are two possible approaches to the problem of reconstructing our marking practice. One involves the use of an absolute definition of ability, the other the use of measurement by relative position. Teachers and administrators can and ought to make use of the helpful practice of *marking pupils by ranking them first in order of ability*, following up the ranks thus obtained by approximate assignment to the various letter or number groups of the marking scale. This in turn should be checked up by distributing pupils to different groups by the use of some such percentile allotment of the normal distribution as 5 to 10, 20 to 25, 35 to 40, 20 to 25, and 5 to 10 for successive fifths of the scale. Lacking an approximate statement of absolute abilities such as would be represented by a detailed word-statement of various grades of ability the teacher can rank pupils in order of ability, at least in descending *groups* of ability, and thereby measure them by their relative position in the total groups. This relative position can, closely enough for practical puposes and

also fairly easily, be turned into definite marks by assigning certain approximate percentages of the entire pupil population to various groups, deciding the "border-line" cases perhaps on subjective judgment.

The placing of the passing mark. If we assume the normal curve as the foundation of our distribution of ability and then divide the marking scale into a given number of parts we automatically establish either one of two important facts, (1) the value of the passing mark and (2) the proportion of pupils who ought to fall in the various divisions of the scale. If we make use of the whole 100 per cent scale, assume the normal curve as representing the distribution of ability, assume the proportion of our group of pupils above which we shall not permit ourselves to fail students, then we find our passing mark locating itself somewhere in the region of 15 to 20 on the scale. That is to say, instead of setting up an arbitrary number, such as 70 or 75, which has no direct meaning in terms of pupil-ability, we now set up an upper numerical limit concerning the number of pupils who evidently are unable to master the essentials of our courses of study. If we take as this upper limit, say, 5 to 10 per cent, perhaps 7 or 8, then examination of the area of the probability-curve shows us that if we go over, say, 20 points on the base line from the 0 point at the left we have included roughly 10 per cent of the area of the curve. If our "limit" of failure is smaller, then our "passing mark" will be lower. Furthermore the specific location of the position of any pupil on this scale of ability may be defined rigidly in terms both of relative position and of absolute numerical score. An individual who receives a mark of 75, for example, is now an individual located definitely with respect to rank in the group, provided the group distributes in ability in accordance with the area of the curve which has been used.

X. *A program for the reconstruction of the marking system.* As a summary statement of the present status of thought the following steps are both desirable and practicable as means of thoroughly rebuilding our public-school marking system:

1. The evident lack of reliability and consistency in teachers' marks and their evident inaccuracy as measures of ability demand of administrators the *initiation of campaigns of education among their teachers* to a recognition of the importance of the facts set forth. In the carrying on of such campaigns helpful administrative devices have been found to be:

(a) The publication of the distribution of teachers' marks each semester in open bulletins.

(b) The discussion of these bulletins in teachers' meetings.

(c) Insistence that each teacher tabulate and plot graphs of her distribution of marks each semester before submitting them to the office.

(d) Requiring reading and discussion of the use of distribution-curves in marking.

(e) Insistence that each teacher rank her pupils prior to assigning final marks, whether on examination, "paper," "quiz," or semester's work.

(f) The appointment of departmental committees with instruction to define, *in detailed word-statements*, each grade of ability represented on the marking scale.

(g) The use of objective scales and tests in all those subjects and for all those types of subject-matter for which such tests and scales are now available.

(h) The use of "general-ability" tests for purposes of classifying pupils and of detecting various grades of ability in our pupils early in the course of instruction.

2. If letters are now used in a school system certainly each one should be merely a symbol to signify the abilities-to-do which have been defined in very detailed worded statements, understood alike by teacher, administrator, and pupil, in terms of which the instruction has constantly been oriented.

3. If numbers are used they should be employed only as economical symbols to represent the various groups or divisions of the marking scale; that is, only one number (for example, the median one) should be used to typify a group of marks (as, for example, the "excellent" group, the "A" group), instead of using, as is now common, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Thus the only numbers used would be such clearly separated numbers as 95, 90, 85, etc. Numbers in themselves would cease to have the "picayunish" absolute differences in meaning that they pretend to now and would merely stand for abilities which have been distinguished clearly through detailed worded statements.

4. As a practical and helpful tool in the adequate measurement of student work, measurement by ranking with subsequent transmutation to absolute marks by means of a distribution-curve (preferably the normal probability-curve) is very desirable.

Individual differences in interests. The interests of high-school pupils have been surveyed in a number of ways. For example, pupils have been asked to state their preferences for different forms of literature and for different school subjects. They have also been asked to report upon extra-curricular activities which interest them. The following account of the mathematical interest of pupils illustrates this kind of investigation.

MATHEMATICAL INTERESTS OF HIGH SCHOOL PUPILS^{*}

BY WALTER F. DOWNEY

The purpose of this investigation is to obtain from high school pupils a frank statement regarding their interests and preferences in the study of mathematics. The schools selected are of different types and sizes, and are geographically widely separated, so that the material should be fairly representative of the attitude and opinions of pupils in this subject of the high school curriculum. In order to obtain an honest expression of opinion from the pupils, the replies were in writing, without signature, and those who conducted the inquiry in each school were asked to impress upon the pupils the purpose of the investigation.

The following is a list of the schools, and the number of replies:

HIGH SCHOOL	NUMBER OF REPLIES
1. Santa Barbara High School, Santa Barbara, Cal.	248
2. Chaffey Union High School, Ontario, Can.	152
3. Ball High School, Galveston, Texas	278
4. Cleveland High School	1,685
5. McKinley High School } St. Louis, Mo.	
6. Soldan High School	
7. Crane Technical High School, Chicago, Ill.	1,784
8. Canton High School, Canton, Ill.	281
9. Lincoln School, New York, N. Y.	49
10. Asbury Park High School, N. J.	76
11. Belmont High School, Belmont, Mass.	255
12. Hopedale High School, Hopedale, Mass.	39
13. Waltham High School, Waltham, Mass.	220
14. Girls' Latin High School, Boston, Mass.	594
15. English High School, Boston, Mass.	1,317
Total replies	6,978

^{*} *The Reorganization of Mathematics in Secondary Education*, 517-523. Adapted.

As this is an investigation of the attitude of the pupil and is not a comparative record of schools, the following data will be given without identifying the school. The order is not the same as that given in the previous table, but the list includes the same fifteen schools.⁹

I. *Do you like mathematics?* To this question the replies showed the following results:

SCHOOL	YES	NO	PARTIALLY
A	87%	5%	8%
B	84	16	—
C	91	9	—
D	82	15	3
E	89	11	—
F	79	21	—
G	80	13	7
H	84	16	—
I	80	16	4
J	72	16	12
K	69	31	—
L	66	21	13
M	90	9	1
Total	84%	14%	2%

The preceding data indicate, in general, that more than four-fifths of the pupils studying mathematics "like" the subject. The highest percentage is 91%; the lowest 66%; the average of all schools is 84%. The variation seems to have no bearing on the size or locality of the school. The four schools with the highest percentages are very widely separated, and are near the two extremes in size, while we have the same thing true of six schools with the lowest percentages.

In only one school was mathematics found to be required of all pupils for four years. The other schools have the subject required from two to four years in some courses, with no requirement in others. In one state represented, which has a state wide school organization, with a state university, there is no mathematical requirement in the high school curriculum. The schools which reported from this state have slightly above the average result. In the school with the highest mathematical re-

⁹ The replies from the three high schools in St. Louis were received as a combined report and are so given above.

quirement the percentage compares favorably with the record of other schools and with the average.

In a few schools a comparison was made on the basis of sex. The totals of these schools showed that 85% of the boys, and 84% of the girls like mathematics. In comparing the coeducational schools with those exclusively for boys or for girls, there does not appear enough variation to conclude that there is any marked difference on the basis of sex.

II. *Why do pupils like or dislike mathematics?* The distribution of reasons for liking the subject, as given up by 5788 pupils, is as follows:

INTER-ESTING	USEFUL	GOOD MENTAL TRAINING	EASY	EXACT AND DEFINITE	GOOD TEACHER	MISCEL. REASONS	NO REASON
41%	22%	19%	12%	2%	1%	1%	2%

The reasons assigned by 1036 pupils for disliking the subject are as follows:

DULL AND UNINTERESTING	TOO DIFFICULT	NOT USEFUL	REQUIRES TOO GREAT ACCURACY	NO REASON
27%	43%	9%	1%	20%

On the basis of interest, there is a wide variation, 57% in one school assigning this as a reason for liking mathematics and 15% in another, a range of 42%. On the basis of usefulness there is a range of 27%; in mental training the range is 33%; on being "easy," the range is 22%. This would seem to indicate a great variety of reasons for motivation in different schools, and, perhaps, a great variation in the emphasis of mathematical values urged by instructors.

The striking feature in the reasons for disliking the subject is that over two-fifths of the pupils who dislike it find it too difficult and one-fifth have no reason for their attitude.

III. *What topics in algebra are considered by pupils (a) the most popular, (b) the most unpopular?*

(a) On the basis of the returns received, the topics liked best by pupils in the order of the number of pupils who selected them

are (1) the equation, (2) the four fundamental operations, (3) factoring, (4) problems. Other topics receiving enough attention to justify notice but selected by a much smaller number of pupils are the graph, square root, and logarithms.

The reasons for selecting the four most popular topics are assigned as follows:

	EASY	INTER-ESTING	GOOD MENTAL TRAINING	EXACT AND DEFINITE	USEFUL	LIKE A PUZZLE	NO REASON
(1) Equations	30%	26%	10%	1%	24%	—	9%
(2) Four fundamental operations	35	26	12	3	1	—	23
(3) Factoring	58	34	4	2	1	1	—
(4) Problems	28	26	14	1	18	1	12

(b) As may be anticipated the same topics also receive the greatest attention by pupils in discussing their dislikes. Symbols of aggregation, fractions and surds also are disliked, but by a smaller number.

The reasons for dislike are distributed as follows:

	TOO DIFFICULT	UNINTERESTING	TOO MUCH DETAIL	NOT USEFUL	NO REASON
(1) Equations	63%	7%	18%	—	12%
(2) Problems	83	2	9	1%	5
(3) Four fundamental operations	66	19	2	13	—
(4) Factoring	65	22	5	8	—

It seems obvious from the above that the main bases for choice of topics in algebra are (1) facility in doing the work, (2) interest in the topic. As a cause for dislike the question of difficulty outweighs all other reasons combined.

In a few schools pupils who had studied both algebra and plane geometry were asked to express their preference. Algebra proved to be the choice of 20% more pupils than plane geometry.

IV. *What topics in plane geometry are considered by pupils (a) the most popular, (b) the most unpopular?*

(a) In plane geometry, the four topics liked best, with the reasons, are as follows:

	INTERESTING	USEFUL	EASY	GOOD MENTAL TRAINING	INTERESTED IN DRAWING AND MEASURING	ACCURACY REQUIRED	INDEPENDENCE	LIKE A PUZZLE	NO REASON
(1) Constructions	47%	6%	22%	8%	11%	1%	2%	1%	2%
(2) Triangles	38	22	17	11	10	2	—	—	—
(3) Circles	60	7	18	15	—	—	—	—	—
(4) Originals	37	6	3	30	2	—	18	—	4

(b) The topics liked least, with reasons, are:

	TOO DIFFICULT	INDEFINITE	UNINTERESTING	NOT USEFUL
(1) Originals	75%	3%	22%	—
(2) Loci	65	17	18	—
(3) Triangles	42	—	20	38
(4) Circles	50	16	31	3

V. Preference for High School Subjects.

PREFERENCE	1ST CHOICE AS A PERCENTAGE OF THE TOTAL	1ST	2ND	3RD	4TH	5TH
English	25%	1,774	1,604	1,394	1,061	502
History	18%	428	405	565	544	285
Latin	22%	318	293	294	325	156
French	16%	257	341	425	452	174
German	13%	36	74	48	49	27
Spanish	11%	163	231	227	285	229
Mathematics	23%	1,575	1,657	1,465	1,336	1,020
Science	22%	932	842	881	920	572
Commercial subjects	20%	161	156	158	129	94
Drawing	23%	695	548	565	574	340

In the above table are shown the number of pupils who expressed varying degrees of preference for these subjects, and the percentage of the total of each subject who gave it first prefer-

ence. On this basis English was first, with 25%; mathematics and drawing in second place, with 23% each; Latin and science next, with 22% each, while German and Spanish occupy last places with 13% and 11%, respectively. Choices beyond the fifth are excluded in this table; also subjects which only a few pupils selected.

Conclusions. Mathematics is liked by more than four-fifths of the pupils who study it.²

Although there is great variation, the result stated above is entirely independent of the size of the school.

Pupils "like" mathematics mainly on the basis of general interest, usefulness and the mental training involved, while they dislike it mainly because of its difficulty.

In algebra, the topics which are favorites, are those selected mainly because they appear the "easiest," while those least favored are so stated on the basis of being "too difficult."

At the present time, manipulation appears to be as popular with pupils as the applications of such work. This, possibly is due to the emphasis still given to the former in most schools.

In geometry, constructions are very popular, while original exercises are equally unpopular. The former fact encourages a stronger appeal to the motor minded pupil, while the latter suggests a limitation of difficulty, and proper emphasis on the practical use of geometry with the necessary contact to the life experience of the pupil.

In popularity with pupils, mathematics compares well with the other common subjects of the curriculum.

The gradual mental development of children. Until recent years, knowledge about the mental development of children was derived mainly from anecdotes and uncontrolled and unstandardized forms of measurement. Dewey, for example, observed the activities of children of the primary grades and found those chil-

²In 1916 Professor Hanus of Harvard, and Mr. Gaylord made a study of eleven schools in New England cities to determine the pupils' likes and dislikes of this subject. They reported that 18.8% disliked mathematics. It is interesting to note that the two results point to the above conclusion although one was made on the basis of a study of larger schools in one section of the country, while the present investigation includes schools widely separated and varying greatly in size.

dren exhibiting, by their actions, evidences of reasoning analogous to that of adults when working under similar conditions. Many parents as well as teachers have observed evidences of the same general character in the case of children below school age and in case of others in all the grades of school.

Likewise, in the case of children's interests in different types of activities, there are ample evidences of an early beginning of a diversity of interests. Adventure, for example, manifests itself as early as the infant begins to explore his world and test his ambulatory powers. No greater is the infant's apparent interest in adventure than that of the youth, or of the mature individual: so long as mental activities operate sufficiently to make life interesting, mankind welcomes adventure. Equally normal is the tendency to make collections of odd pebbles, postage stamps, money, or rare books, according to the age and the individual: few persons are too young to lay claim to certain property and few too old to find pleasure in adding certain prizes to their store.

Recently developed technique has made possible the more accurate measurement of certain mental traits. By successive measurements of these traits, corroboration of the theory that children develop gradually has been obtained.

RATE OF MENTAL GROWTH, AGES NINE TO FIFTEEN¹⁰

BY FOWLER D. BROOKS

The results of annual re-tests of one hundred seventy-one children, ages nine to fifteen, of various economic and social groups (as to mental ability, more highly selected at the earlier ages than at the later ones), give evidence that the rate of mental growth, as measured annually, is very nearly a straight-line affair, and is approximately the same for each year for school population of these ages.

No nine- or ten-year-olds below the advanced fourth grade were tested. No children beyond the third year of the junior high school (grade IX) were tested. These limits cut off younger

¹⁰ *The Journal of Educational Psychology*, XII, 502-510. December, 1921. Abridged.

children of less ability and older children of more ability. Dewey, Child, and Ruml,¹¹ making a careful selection from three thousand New York City public school children, so as to secure an unselected school population, found that 34 per cent of the nine-year-old boys and 34 per cent of the nine-year-old girls were below grade IV, while 38 per cent to 46 per cent were in the beginning IV. Of the ten-year-old boys 16 per cent were in or below the beginning grade IV, while 26 per cent of the ten-year-old girls were similarly classified. Since we did no testing below the advanced IV, and since the testing was done at the end of the school year, it is seen that the nine- and ten-year-olds represent a more highly selected group than those of later ages. This, of course, is upon the basis of grade reached in a carefully graded and carefully supervised school as an index of ability.

Under these circumstances we would expect greater gains in the earlier years in those functions which we think of as being more closely associated with intellectual ability. The curves for memory, higher and informational functions seem to show this, or rather, are to be interpreted with this fact in mind. Without doubt a few children of superior ability were not tested at the later ages, having already completed the ninth grade.

Then, too, quite a number of the older children made such high scores at their first testing that at later re-tests there was no opportunity to show much gain in gross score in some of the tests (e.g., a twelve-year-old spelling fifty-seven of a sixty word test, could not show the same improvement in gross score during the two following years as could a ten-year-old who spelled twenty-six words at his initial testing; nor could a thirteen-year-old, having an initial score of 182 out of a possible 190 in reading vocabulary gain as much as a ten-year-old scoring 128). There are enough of such cases to account for much of the decrease shown in rate in several of the tests. Then, too, to make a gain of two points from a high initial gross score probably represents greater absolute improvement than the same gain in points from a lower initial score. These two considerations (such high initial scores as allow no chance for much improvement in gross score, and the significance of small increases in gross scores from high initial scores) account for much of the decrease shown at the later ages, and, when considered in connection with the effect

¹¹ Dewey, Child, and Ruml: "Methods and Results of Testing School Children," 1920.

of selection at the earlier ages, indicate that the rate of mental growth is probably very nearly constant from nine to fifteen for school population.

Significant sex differences in the rate of mental growth are not shown. Combining results for boys and girls of the same ages, we have twenty-four to forty-five cases of each age group.

Space permits but very brief mention of the light our data throw upon the doctrine of compensation. The correlations between the gains in the different groups of functions have been calculated by the Pearson product-moment formula, age and sex having been equalized. These coefficients, uncorrected for attenuation, are positive but low, varying from 0.04 to 0.31. These indicate that gain in one group of functions is not accompanied by loss or decrease in another group, as has often been stated.

It is further seen that mental growth is here found to be at a regular rate from year to year, and not characterized by sudden spurts. Of course, it may well be contended that such spurts do occur but that the annual re-tests do not show them; that, if we had a great number of reliable individual mental growth curves—curves showing growth during a period of years by three- or four-month intervals—we might find spurts. **This contention** involves at least the three following considerations:

First.—We must not overlook the fact that the doctrine of spurts, is based, not upon extensive experimental evidence, but upon observation and reasoning by analogy from physical development; that experimental evidence seems to indicate regularity rather than irregularity.

Second.—We do not now have, and in the present state of development and educational tests and scales it is doubtful if we can secure such reliable individual mental growth curves as are needed to settle this question. To do so we need tests of a very high degree of reliability; for many functions we need enough alternates of demonstrated equivalence that two tests may be given at any one time (say one day to one week apart) and, three or four testings per year may be made without introducing the practice effect that would come from using the same form of a test or more times a year. We need, also, to be sure that all who are being tested have a certain familiarity with test procedures, so that the improvement due to becoming more used to tests, may be reduced to a minimum. These are special considerations in addition to the usual standard procedures.

Third.—The re-test method may be called in question on

account of the limitations due to our present lack of an adequate number of reliable tests. It may be urged that this deficiency may be overcome if, instead of the re-test method, we test many thousands of each age, grouping them by quarter-years of age. Bureaus of research that have a broad program of measurement can supply much valuable data of this kind. Such bureaus, however, by using suitable individual record cards, and by following a consistent program of testing from year to year, will also have valuable data for such studies of individual mental growth as our present (and of course, future) tests and scales enable us to make. The re-test method, despite the limitations placed upon it by our present tests and scales, has certain well-recognized, fundamental advantages, long ago pointed out by Thorndike.

Conclusions.—(1) We have seen that the re-tests of this group of one hundred seventy-one children, ages nine to fifteen, by a large battery of tests, show mental growth to be at a rate probably very nearly constant from year to year. The variations from straight-line development at a constant rate are probably best interpreted as due to selection at the earlier ages, to the presence of numerous high scores at the later ages, and to the small number of cases.

2. No significant sex differences in rate of mental development are found.

3. Regularity, rather than irregularity, seems to characterize mental development as measured at yearly intervals.

4. Increase in ability in one group of functions does not seem to be accompanied by a decrease in ability in some other group.

5. Wherever careful testing is done, individual cumulative records of test results should be kept. Such procedure, if properly standardized, will give an increasingly large amount of very valuable data on the problem of mental development of school children, and will give it with a minimum of extra expenditure of time and money.

ON THE IMPROVEMENT IN INTELLIGENCE SCORES FROM FOURTEEN TO EIGHTEEN¹²

BY E. L. THORNDIKE

Adults measured by the intelligence tests in common use attain scores little if any above those made by 14-year-old children in

¹²*The Journal of Educational Psychology*, XIV, 513-516. December, 1923. Tables of data are contained in the original article.

school; and this has given rise to the conclusion that in general intelligence does not improve after that age. On the other hand, whenever repeated measurements have been made over an interval of a year or more upon the same individuals initially 14 or 15, there has been a marked improvement. The data from repeated measurements need, however, some allowance for the special practice in taking the tests themselves, and the amount of this has not been known with surety.

In May, 1922, 4473 pupils in Grade IX, 4304 in Grade X, and 3544 in Grade XI in various high schools were tested with an examination representing composite or recognized group tests of intelligence. In May, 1923, the pupils in Grades X, XI, and XII of the same schools were tested with an alternate form of the same examination. $2790 + 3136 + 2638$ of the original $4473 + 4304 + 3544$ were among those measured in 1923, representing (except for temporary absences or removals to other cities) those who had continued in school a year.

After making due allowance for special practice effects, there is found to be a gain due to growth and training. This gain is 11.1 points. The method for allowing for special practice is explained in the original article.

What this average gain of 11.1 in a year amounts to may be realized from the fact that it is about one-third of the mean square deviation of individuals in Grades IX, X, and XI, in first-trial score with the examination or about one-half of what their mean square deviation would be if they were perfectly measured. Since the variability of the high school population in Grades IX to XI may be estimated to be at least half that of all 14-year-olds, and since the mean square deviation of all 14-year-olds may be estimated as 23 months of mental age, measured by Stanford Binet or about 21 months if perfectly measured, our gain may be set as equivalent to at least 10 months of mental age around 14. It is thus a gain of considerable magnitude.

The gain is very closely the same for all pupils in Grade IX, in Grade X, and in Grade XI, in 1922, the medians being 22.4, 23.6, and 23.4 for the entire gain, or 10.5, 11.7, and 11.5 if 11.9 is subtracted from each for the effect of special practice with the tests. Any decrease in gain with age, if such there be, is offset by the selection of those more capable of gain.

COMPARATIVE VARIABILITY AT DIFFERENT AGES ¹³

BY V. A. C. HENMON AND W. F. LIVINGSTON

There is a widespread belief which frequently finds expression in the literature of education, that individual differences are greater during adolescence than at any other time in life and that the development from childhood to adolescence is not gradual but saltatory. G. Stanley Hall is the chief proponent of this doctrine. Concerning the adolescent period he says: "The human plant circumnutates in a wider and wider circle, and the endeavor should be to prevent it from prematurely finding a support, to prolong the period of variation to which this stage of life is sacred. . . ." ¹⁴ "The possibility of variation in the soul is now at its height." ¹⁵ "The forces of growth now strain to the uttermost against old restrictions. It is the age of bathmism, or more rapid variation, which is sometimes almost saltatory." ¹⁶ "Individual differences of all kinds are now suddenly augmented." ¹⁷ "The range of individual differences and average errors in all physical measurements and all psychic test increases." ¹⁸

This theory has important practical applications and its influence is plainly visible in our present systems of school organization. The contention that youth is the period of great fluctuation and that therefore throughout the high school age there is a decided increase in variability in all mental functions implies that the secondary school should provide a wider range of elections in the curriculum, smaller classes and more individualization of instruction, and a greater versatility in methods of presentation of subject matter in order to appeal to the widely varying characteristics of a high school class. On the other hand (and this is the more serious consideration), the implied greater similarity between children in the grades offers an excuse for larger classes, for poorer teachers, and for forcing all pupils though the same processes and by the same methods until the approach of adolescence.

¹³ *The Journal of Educational Psychology*, XIII, 17-27. January, 1922. Tables of data are contained in the original article.

¹⁴ Hall, G. Stanley: "Adolescence," Vol. II, p. 88.

¹⁵ *Ibid.*: p. 89.

¹⁶ *Ibid.*: p. 90.

¹⁷ *Ibid.*: p. 363.

¹⁸ Hall, G. Stanley: "Youth," p. 6.

While thousands of children have been tested in a great variety of mental and physical traits, the writers have been unable to locate any systematic review of the available evidence on this supposedly greater variability during adolescence. It is a curious fact that in spite of the importance of the theory, no one appears to have taken the trouble to present the evidence for it, much less question its correctness. Common observation, confirmed by more exact study, shows the wider variability in height and weight at adolescence and, by analogy, the law appears to have been extended to mental traits without adequate investigation.

This study represents an examination of the comparative variabilities as revealed in some of the most representative studies of mental and physical development. Those investigations were used in which the numbers of cases were large, in which the variabilities have been determined, and in which norms for a wide range of ages were available.

The variabilities for different ages were rendered comparable by determining the coefficient of variation, obtained by dividing the measure of central tendency (average or median) by the measure of variability (average deviation, standard deviation, or probable error). This is merely finding the per cent that the variability is of the central tendency from which the deviations were obtained. Whatever measures of central tendency or variability were used by the investigator were used for our calculations. While the essential problem was to compare variabilities at different ages, the variability in different grades is practically as important and this was determined in several sample cases. Incidentally, also, the ratios of female to male variability were calculated for the light they might throw on the mooted question of the variability of the sexes.

Variability in physical traits. The comparative variabilities in height, weight, and lung capacity were computed from the data of Burk,¹⁹ Baldwin,²⁰ and Gilbert.²¹ Various other physical characteristics were studied also but not reported here. In the interest

¹⁹ Burk, F.: Growth of Children in Height and Weight, *American Journal of Psychology*. Vol. IX, pp. 253-326.

²⁰ Baldwin, Bird T.: Physical Growth and School Progress. *Bulletin* No. 10, U. S. Bureau of Education, 1914, p. 212.

²¹ Gilbert, J. A.: Researches on the Physical and Mental Development of School Children. *Studies from the Yale Psychological Laboratory*, Vol. II, pp. 40-100, 1894.

of economizing space and to prevent confusion in examining tables, only the total numbers and not the number of cases at each age are given. The number of cases is in all cases sufficiently large to make the coefficients reliable.

An examination of the data shows for height and weight approximately constancy in the coefficients for boys up to the age of $12\frac{1}{2}$ years, with a sudden rise to the high point at 14 or $14\frac{1}{2}$ years and a decrease thereafter. The highest points for the three sets of measurements for height are at $14\frac{1}{2}$, $15\frac{1}{2}$, and 14 years respectively. For weight the high points are $13\frac{1}{2}$ and 14 years. The same general tendency holds for girls except that with them the highest point is reached roughly two years earlier. In weight the highest points are at $12\frac{1}{2}$, $13\frac{1}{2}$, and 12 respectively. In weight the highest point is at 12 years in Baldwin's results and in Gilbert's data at 12 and 14 years. Both in height and weight, then, theory seems to hold for not only are the variabilities greatest at adolescence but the development is saltatory. Particular interest attaches to this table for height and weight are the only traits which we have been able to find where a large number of cases have been studied, in which the theory does hold, with one exception. The measurements of lung capacity, based on about fifty cases for each age, show no evidence of greater variability or saltation at adolescence.

Variability in mental traits. Coefficients of variability in mental traits were computed for the data reported by Gilbert,²² Pyle,²³ and Bickersteth.²⁴ In Gilbert's results there are about fifty cases at each age. In Pyle's norms the number of cases varies widely. A detailed examination of these data shows that the period of greatest variability in mental traits is during the years of childhood, not at adolescence. The coefficients tend to decrease with fair uniformity from childhood to adulthood. There is no evidence whatsoever of increasing variability or saltation. On the contrary, the decrease in variability is as unmistakable as it has been shown to be in practically all special mental traits.

Variability in mental traits by grades. Even if there is no evidence for increasing variability and saltation with age, it might

²² *Op. cit.*

²³ Pyle, W. H.: "The Mental Examination of School Children," New York, 1913, p. 70.

²⁴ Bickersteth, M. E.: The Application of Mental Tests to Children of Various Ages, *British Journal of Psychology*, Vol. IX, Dec., 1917.

still be urged that, after all, pupils are not classified in school on the basis of age and that on a classification according to grade, a wider range of differences at adolescence might reveal itself. Many such measurements have been made but only two will be reported here. The first are the coefficients for five of the Courtis tests given to 27,171 children in the New York School Survey. Table XXVI gives the facts.

TABLE XXVI
COEFFICIENTS OF VARIATION IN COURTIS ARITHMETIC TESTS
(NEW YORK SURVEY DATA)

GRADE	AVERAGE COEFFICIENT OF VARIABILITY
4	0.228
5	0.214
6	0.193
7	0.171
8	0.138
9	0.177
10	0.169
11	0.159
12	0.164

The second are the variabilities in Language Scale A of the Trabue Completion Tests for which results are available for a large number of cases from Grade II upward.²⁵ Table XXVII gives the coefficients of variability for these data.

The results show a rapid decrease up to the fifth grade and a gradual decrease thereafter.

Discussion and conclusions. It is evident that the law of increasing variability at adolescence does not hold for mental traits, so far as the groups for which measurements are available are concerned. On the contrary, there is in the school groups a marked reduction in variability at adolescence as contrasted with childhood. How is this reduction to be accounted for, particularly in view of the results of experiments on the effects of equal practice on individual differences, which have uniformly shown that differences do not decrease but rather increase when opportunities for practice are equalized? In a certain sense it may be

²⁵ Trabue, M. R.: Completion Test Language Scales. Columbia Univ., *Contrib. to Educ.*, 1916.

TABLE XXVII

COEFFICIENTS OF VARIATION IN TRABUE COMPLETION TESTS

GRADE	NUMBER OF CASES	COEFFICIENT OF VARIABILITY
2	1,318	0.454
3	1,437	0.380
4	1,403	0.290
5	1,507	0.196
6	1,454	0.165
7	1,456	0.148
8	1,427	0.144
9	273	0.140
10	171	0.116
11	136	0.094
12	103	0.103
College graduates	114	0.067

true that the range of differences is greater at adolescence if we include at each age the mentally deficient whose abilities in any test would be zero. School children from whom norms in mental tests are usually obtained are a selected group. Even so, in view of the large reduction in the coefficients, it is pretty certain that the average variability would not show an increase with age, provided a proportionate number of borderline and feebleminded children were tested and these results included in the distributions. In any case, the pedagogical inferences are based on the normal school population. Selection by eliminating those at the lower end of the distribution curve accounts, then, in part for the reduced variability found but not for all of it.

Inadequacy of training causes a narrowing of the distribution at the upper end. It has been shown over and over again that under proper stimulation, a very great increase in efficiency in mental functions is obtainable even in those traits which in the ordinary circumstances of life are much practiced. In other words, there are possibilities of very great increases in efficiency in the upper ranges which are not realized and are not revealed in the test norms actually obtained. The norms, for example, for the Courtis Tests are considerably lower than they would be if the stimulus of experimental conditions were provided.²⁶ There

²⁶ Henmon, V. A. C.: Improvement in School Subjects Throughout the Year. *Journal of Educational Research*. March, 1920.

is then no contradiction between these findings and the experiments on the effects of equal practice on individual differences. Under ordinary conditions, the effects of equalizing practice is to reduce individual differences since a certain modicum of efficiency is all that is required. When a sufficient stimulus is provided, the upper limit is greatly extended and both the range and average variabilities are greatly increased. There is then a possibility that individual differences may increase at adolescence but there is not evidence that they actually do.

What we need for a final answer to the problem is repeated measurements of a greater number of unselected individuals over the entire period of childhood and adolescence. Such data are, of course, nowhere to be found now.

Principles derived from discussions of pupils' mental equipment.²⁷ High schools have lagged behind elementary schools in the standardization of the rate of promotion.

From the freshman to the senior year there is commonly a steady decrease in the number of failures. Reasons for this diminution indicate that the percentages of pupils who pass depend upon the school as well as upon the pupils themselves. That is, high-school failures are attributable to teachers, teaching equipment, and school policies as well as to pupils' inabilities.

Standards for passing as well as those for excellence should be set with reference to social demands, pupils' abilities, the school's ability to offer beneficial training, and the amount of the whole 100 per cent scale used in assigning marks.

The variability, the unreliability, and the inconsistency in the distribution of marks necessitate an overhauling of present-day systems of marking.

Teachers' marks should indicate pupils' ability-to-do, this having been estimated from specific pupil-performances.

Such matters as interest, effort, moral qualities, and attitude as contributing to the specific performance of pupils should be considered in assigning marks.

As a result of the variability and unreliability among the

²⁷ See also the principles at the end of Chapter VII.

marks given by different teachers, the interval between assigned marks should be approximately equivalent to 8 per cent.

As a rough check upon the distribution of marks, one should recognize both the advantages and the limitations of the normal probability curve.

Literal and numerical marks should be readily referable to clear word-descriptions of the marks.

Marks should be assigned by first ranking pupils in order of ability and then placing them within the approximate group on the marking scale.

All school subjects find favor with pupils. The amount and quality of pupils' interests depend upon the quality of teaching and the relation of each given subject to pupils' imagination or real life.

From infancy to adulthood, children's capacities gradually develop. Ordinarily the capacities develop concomitantly to the extent that educative means are evenly distributed with reference to the different tendencies. By special emphasis, that is, by exposure to certain educative processes, certain traits can be disproportionately developed.

An increase in ability in one group of functions does not seem to be accompanied by a decrease in ability in some other group.

There are no significant sex differences in the rate of mental development.

So far as groups for which measurements are available are concerned, there is in school groups a marked reduction in variability at adolescence as contrasted with childhood.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Make a list of the qualities which characterize high school pupils of each of the following groups: excellent, good, fair, poor, failing.

2. Place the letter x before the qualities which can be easily measured, the letter y before the qualities which can be readily estimated, and the letter z before any qualities which are immeasurable.

3. By what devices can we measure the qualities which you marked with the letter x ? How great is the reliability of measurements made in this way?

4. What prevents the making of accurate measurements of qualities marked y and z ?

5. What is the norm for the distribution of grades for a class in first-year algebra if the grades for the past ten years have been as follows? (In 1913, 9 pupils received a grade of A, 7 a grade of B, and so on.)

Years	School Grades				
	A	B	C	D	Failed
1913	9	7	5	2	0
1914	8	9	6	1	0
1915	3	12	8	4	2
1916	2	10	13	5	2
1917	3	7	15	4	3
1918	6	11	19	11	3
1919	8	14	26	17	5
1920	11	20	33	21	6
1921	9	26	39	18	7
1922	10	24	37	13	5

6. What additional values can be derived from basing a norm upon such data as Bliss presents?

7. Should a "normal distribution" of grades have been obtained in each of the classes or departments reported by Bliss? Support your answer.

8. What evidence have you seen which supports the opening statement of Rugg's article?

9. Prepare a brief of Rugg's article. Be able to defend each point of your brief.

10. Which is the most important of the three traits that teachers attempt to measure? Defend your answer.

11. To what extent do Bliss's data indicate conformity with the normal probability-curve?

12. What are the advantages of having only five divisions in the marking scale?

13. What should a pupil's report card attempt to show about the pupil? How can these matters best be shown?

14. What disadvantages and what advantages are there in ranking pupils in order of ability?

15. What is a passing mark?

16. Show how a high school teacher can use profitably each of the following tendencies: the adolescent's interest in making collections; the adolescent's interest in adventures; the adolescent's interest in matter-of-fact subject matter; the adolescent's ability in rote memorizing; the adolescent's intolerance of "easy" courses.

17. Contrast the data which support the gradual development theory with those which are given in defense of the saltatory theory.

18. In view of the fact that children often reason faster and, for practical purposes, better than their parents, what difference, if any, should there be between the forms of school discipline of the successive grades?

19. Outline a brief defense of the principles stated at the close of this chapter.

CHAPTER VIII

THE MENTAL EQUIPMENT OF SECONDARY SCHOOL PUPILS (Continued)

INTELLIGENCE AND ITS MEASUREMENT¹

BY V. A. C. HENMON

1. *The nature and measurement of intelligence.* Intelligence, in the ordinary acceptance of the term, has been defined by Lester F. Ward to be "intellect coupled with the product of its operation," or in other words, "intelligence is intellect plus knowledge." This certainly corresponds to the use of the term in pedagogical and sociological theory and in practical life. The intelligent man is the well informed man and one who is capable of readily appropriating information or knowledge. Without doing violence to language the psychologist can not give it any other technical significance. Intelligence, then, involves two factors—the capacity for knowledge and knowledge possessed. The untutored savage or barbarian may have high intellectual capacity, but without knowledge we should not ordinarily call him an intelligent man. We could best only say that he had a fine mind, a fine intellect, high intellectual power, or else that he possessed a high native intelligence. But native intelligence from the point of view of this definition is a misnomer, as is also the customary distinction between intelligence tests and achievement tests. Nothing but confusion results from using the term intelligence to designate the level reached in the acquisition of knowledge or mental age, in which sense it is something which can be developed and trained, and using the same term to designate intellectual capacity or mental alertness which is probably given once for all with one's constitution and can not be materially changed by anything we do. Achievement tests, while measures

¹ *The Journal of Educational Psychology*, XII, 195-198. April, 1921.

of knowledge possessed, are in turn indices of capacity for knowledge, though valueless for comparative purposes of crude, uninstructed intellect, only because there has been no guarantee of equality of opportunity. Intelligence tests, on the other hand, as at present constituted, are a mixture in varying proportions of tests of knowledge, for example, the constantly recurring tests of arithmetical reasoning and of information, with those whose novelty is such that specific past experiences function much less readily and there is an approximation toward relative equality of opportunity. In any case, both groups of tests are measures of both native and acquired intelligence with differences in emphasis. The high correlations between intelligence tests and achievement tests and the high correlations between intelligence tests and teachers' estimates or scholastic standings indicate their essential similarity. Teachers' estimates and school marks, which are used as measures of reliability and validity of intelligence scales, in default of any absolute standard of reference, are based on what children know and on their capacity to know.

Intelligence ought to retain this broad significance. To define it with Stern as "a general capacity of an individual consciously to adjust his thinking to new requirements," which is substantially James' definition of reasoning, or with Meumann as a general capacity for "independence, originality and productiveness in thinking" is to narrow its meaning arbitrarily and to neglect its compound nature. The scholarly or erudite man who has merely acquired the knowledge created by others may not represent as high a degree of intelligence as one who is independent, original and productive in his thinking, but we should scarcely say that he is unintellectual. Intelligence is indicated by the capacity to appropriate truth and fact as well as by the capacity to discover them.

What we want, of course, is a measure of crude intellect or mental alertness as such, a scale for intellect, not a scale for intelligence. Any test which requires mental processes, be they either on the sensory-motor level or on higher levels, which measures the sensitiveness, responsiveness, and retentiveness of the nervous system, is a test of intellectual capacity. It is only because of the absence of an absolute standard of reference, the inability to discount the effect of past experiences, and the narrow conception of the meaning of intelligence, that the tests of higher mental processes appear to be better measures of intellect, and not because they involve intellectual capacity any more evi-

dently. The essential thing in a test of pure intellect is to secure such novelty as to reduce inequality in opportunity and training to a minimum, and such complexity as to reveal differences clearly and unambiguously. It is not a matter of the kind of mental process involved primarily. A properly constituted test of intellect ought, therefore, to take a wide sampling of so-called lower as well as higher processes and the relative weights to be assigned to each element determined. The tests must be extended to measure the capacity to learn in other directions than the ability to use words, signs, and symbols. The so-called general intelligence tests are not general intelligence tests at all but tests of the special intelligence upon which the school puts a premium. The extension of the term intelligence to include what Thorndike has called mechanical intelligence, the ability to manipulate things, and social intelligence, the ability to manage men, means that we need not one, but several scales of intellect from which we can secure an intellect profile. We have been gradually evolving a type of test for abstract intellect that is of use in classification and prognosis in school, but is of no convincing value as a measure of general intelligence as such, nor of demonstrated value in vocational guidance and direction.

2. *Next steps in research.* The construction of group tests proceeds apace. Many of them are uncritically and hastily assembled, hurried into print without norms or standards to satisfy the demand of some publishing company, and often merely rearrangements of familiar material, selected on the basis of the author's opinion of the merits of the component tests. While experimentation in test construction is desirable, critical evaluation of the more important group tests is far in arrears and much needed. General mental age determinations from existing tests are seriously open to question; the intelligence quotient derivatives involve questionable assumptions as to the nature of mental growth; the relatively narrow range of functions measured in many teams of tests make them invalid as measures of general ability; the assignment of equal weight to each test and to each item in the individual tests is surely wrong. These matters need careful study with the better known and better standardized tests.

The correlations between the scores in many of the group scales as a whole and such standards of reference as we possess do not differ very materially. The individual tests, however, differ among themselves considerably in diagnostic and prognostic

value, in susceptibility to practice, in interest to the one tested, in ease of administration and scoring, in relative emphasis on previous training and capacity for meeting relatively new situations. What is needed clearly is more accurate scaling of the items within the individual tests, the reduction in number or elimination of tests that test apparently the same or similar functions, the application of the method of partial correlations to determine causal relationships and the correct weights to be assigned to the individual tests in the scale as a whole. Besides the refinement in the tests of abstract intellect themselves we need also to determine the importance of various character traits which apart from intellect as such make for success in the tests. Until these things are done we shall be in constant danger of misusing the results of tests for classification and prognosis even in schools. We are still far from being able to give the significance and meaning of a test score.

Besides the need for critical evaluation, standardization and interpretation of tests of abstract intellect stands the need for tests of ability to manipulate things and the ability to deal with men, leadership and adaptability in social relationships to complete the intellect profile suggested above.

MENTAL GROWTH AND THE I. Q.²

BY LEWIS M. TERMAN

The problems relating to native mental abilities and to the developmental changes which come with increasing maturity are, and perhaps always will be, among the central problems of educational psychology. We can not adapt the curriculum to the child without fairly accurate knowledge of the mental abilities which the child for the time being possesses and of the abilities which are required to master given types of curricula. We can not intelligently plan a child's later education without more or less dependable means of forecasting what abilities he will possess sometime in the future. Anything that adds to our knowledge of mental growth is bound to be of great practical significance for education. Hence the immense popularity of the Binet tests, which for the first time made possible a fairly serviceable determination of the stage of intellectual maturity which a given subject has attained. The value of these tests was even

² *The Journal of Educational Psychology*, XII, 325-326. September, 1921.

further enhanced when it was discovered that the intelligence quotient maintains, during the growth period at least, a certain amount of constancy. In proportion as laws of intellectual development obtain, the door of the future may be opened; determination of the child's present intelligence status will enable us to forecast, within certain limits of error, what manner of adult he may become.

That rough prediction is now possible on the basis of intelligence tests can no longer be denied. For example, it is a fairly safe prediction that the child who has been completely tested by the Binet scale and found to have an I. Q. of 75 will never attain an I. Q. of 125, or that an I. Q. of 125 will never, barring definite nervous disease, drop to 75. No one would now expect a child with an I. Q. of 60 or 70 to be able to graduate from an average high school or pursue a college course. These predictions are of course very rough, but it is worth something to know that in general there is even a *tendency* for the superior to remain superior, for the average to remain average, and for the inferior to remain inferior. The child-study literature of a decade or so ago gave wide currency to the view that the typical genius was as a child stupid, and that the intellectual precocity is likely to be followed by post-adolescent stupidity! To have progressed in ten years from this stage of ignorance to the point where we can predict with a probable error of 4 or 5 points what I. Q. a given child will have several years hence is a long step forward.

There is no likelihood, however, that even this modest claim for the possibility of prediction will go unchallenged. In fact, insistent challenge has already come, chiefly from two sources. First, from teachers and others whose inclination is to believe in miracles and to look askance at so-called "laws of growth" on the basis of which we presume to forecast a child's future. The acceptance of such laws is hindered by the deep-seated and blind faith that anything is possible for any child. To people who derive satisfaction from the fact that child nature contains so many unknown quantities, the suggestion that one's final intelligence level may be predicted is actually repugnant.

A challenge no less insistent has been voiced by a number of psychologists. It should go without saying that the questions raised by any psychologist who has seriously investigated the problem are entitled to a hearing. The issues are large enough to justify any amount of scientific caution. At the same time it is possible that over-zealous attack on a tentative hypothesis may be

as inimical to true progress as its over-zealous and dogmatic support. I think it can be shown, for example, that some of the recent criticisms of the I. Q. are based on arguments and data so questionable that they are less likely to strengthen than to weaken the position they are intended to uphold. In the opinion of some, if the I. Q. can be demonstrated to have less than absolute constancy in a majority of cases, or to be markedly variable in selected individual cases, or to show a decrease with age in the case of feeble-minded subjects, or to be capable of misuse by the ignorant, it is *ipso facto* worthless and dangerous.

INTELLIGENCE AND PROGRESS IN HIGH SCHOOL SUBJECTS^a

BY MARGARET V. COBB

We can now turn to our data on specific high school subjects, and ask what intelligence is required for success in each. In general, the figures show that the present courses in algebra make as great a demand on intelligence as do those in any one subject taken in the freshman year, and this will be reported as a sample study. More failures occur; more pupils drop out. There is a correspondence between the score a pupil makes on a general intelligence test, and the probability of his "passing" the course. There is a closer correspondence between his score on a test designed to measure mathematical ability, or ability to learn algebra, and the probability of his passing the course. It is worth while, if vocational or educational guidance is to be given, or if sections are to be made up on the basis of probable progress, to have both of these measures.

Pupils who elect algebra, or who choose a course including algebra, are in general a more intelligent group than those who do not; pupils who pass in algebra are in general a more intelligent group than those who do take it but fail. The groups overlap considerably, but the one is definitely better than the other. The contrast between the median scores of those who "pass" algebra and those who fail, or do not take it, is quite striking (in certain Michigan schools). In Alma, the median Alpha score of freshmen who passed in algebra was 94, while the median of those who failed was 78. In Mt. Clemens the corresponding medians

^a From "The Limits Set to Educational Achievement by Limited Intelligence," in *The Journal of Educational Psychology*, XIII, 449-464 and 546-555. November and December, 1922.

were, for those who passed algebra, 107; for those who failed in algebra, 89, and, still more significant, for those who did not take algebra, 69. In Mt. Pleasant the median Alpha score of the pupils who passed algebra was 89; of those who failed, 65. In Milan, the median Alpha score of the pupils who passed was 86, while that of those who failed was 75. In Detroit (Terman Group Test of Mental Ability), the median score of those who passed was 94 and of those who failed 84.

EDUCATIONAL DETERMINISM; OR DEMOCRACY AND THE I. Q.*

BY WILLIAM C. BAGLEY

Let me now examine the basic assumption that underlies the whole theory of mental measurements. Native mentality or native intelligence, the determinist himself will admit, is not directly measured by the tests. What is measured? *"We never measure inborn intelligence; we always measure acquired intelligence, but we infer from differences in acquired intelligence, differences in native endowment when we compare individuals in a group who have had common experiences and note the differences in the attainment of these individuals."*

This, then, is the assumption back of the I. Q. which is playing so important a part now in our educational programs and which threatens to overturn the entire theory and practice of democratic education. The validity of mental measurements and of every inference that is drawn from the alleged facts that the measurements have disclosed is based upon the assumption that *with respect to the materials of the tests* the environment, the experience, the education, the stimulation, and the inspiration of those compared have been identical. We have had assumptions in science before this; in fact, the history of science is largely the history of assumptions and hypothesis. They have their place. *This particular assumption has its place*, and restricted to this place I grant its pragmatic justification. . . . The tests measure a certain ability or group of abilities, but the contributions of experience become so numerous and influential and these vary so widely even among individuals of fairly homogeneous groups that it is the height of absurdity to contend that it is a native and unmodified factor that is being measured. Yet this contention is made the basis of sweeping conclusions regarding what education can or cannot do. If the determinist claims scientific validity for these

* *School and Society*, XV, 373-384, April 8, 1922. Abridged.

extensions of his theory I say without fear of contradiction that no theory in the whole history of science has been based on a group of assumptions so questionable.

Let us see how the determinist abuses his assumptions. On the basis of tests which admittedly measure the influence of experience he argues back to a hypothetical factor which, far from having isolated, he has never clearly defined. The closest that he has come to a satisfactory definition is to call this factor "ability to learn." He then, by an act of pure imagination, reads out of the product everything that experience, education, and training have contributed. Until recently he has had no notion how much they have contributed or where their contribution stops. Within a month he has been confronted with the conclusion, based upon the very statistical methods upon which he himself has relied, that not less than 54 per cent of whatever it is that is measured as native intelligence turns out to be the result of experience and training. And yet his confidence in his early inferences seems to be unshaken. He makes some confident statements about the residue that he calls mentality or native intelligence. But whenever the growth stops, whenever this hypothetical native mentality matures, there suddenly appears an abrupt restriction of the further educational possibilities of the great masses of people. Its essential nature for these people never changes; whatever it is, they have so much of it and no more. For the chosen few, however, further education is not only a possibility but the very hope of civilization. By this time the factor, which originally was ability to learn or "take education," has become ability to "deal in abstractions." A little later, through some alchemy, it becomes "initiative" or ability to solve new problems. Finally, it emerges into a full-blown capacity for "leadership."

Armed with this simple formula, the determinist now starts out to make over education.

Take a man whom you would find by your measurements to be of average or even somewhat below average mentality—the "common man," in short—the *homo ubiquitus* whose educational opportunities I am attempting to safeguard. Take this man in his daily business. Does he not grow in his power to deal abstractly with problems as he becomes increasingly familiar with them? I assert most emphatically that he does. I further assert that *with the proper kind of instruction* he can be taught to deal with many of the abstract problems that the determinist has in mind when he proposes to exclude everyone except the high I. Q.'s

from the privileges of secondary and higher education. The question as to whether society can profitably undertake such an educational enterprise I shall consider in a moment when I shall prove to you that society either must undertake it or perish. . . .

I come now to the most fundamental tendency of the theories which the determinist has constructed, again not on the basis of his facts, but upon the basis of his assumptions. I refer to the inevitable application of his inferences, with all of their questionable logic, to the theory of democracy and to the ideals of democratic education.

Here the professional writers are fairly wary and circumspect. They are not anti-democratic. Far from it; only democracy does not mean what most people have believed. Intelligence is not everything, they assure us; it is only one of the many innate traits that condition achievement. A person may have a high degree of intelligence and still be a failure in life; or he may succeed on a fairly slender margin. Of late, too, the determinist has discovered that the inescapable differences in native intelligence fit in admirably with our industrial development. If automatic machinery provides gainful occupation for the predetermined human automaton, the evils that Mr. Pound and others have conjured up regarding the Iron Man of modern industry become of trifling significance. I have not yet seen this suggestion extended from modern industry to modern art, but it might well be. I refer not chiefly to futuristic painting or to free verse, but to the modern universal drama of the screen where, more emphatically even than in modern industry, the moron seems to have come at last into a real kingdom. . . .

Let us come to the real issue, namely, the need of democracy for a high level of trained and informed intelligence as a basis for collective judgment and collective action. We can not dodge this issue by saying that those who can not readily "take" this kind of education may take some other kind that is far better for them individually. This may be true, but let us not deceive ourselves by calling it democratic. It is not democracy as a theory but as a stupendous fact that education must consider. *The development of democracy has been unquestionably toward the elevation of the common man to a position of supreme collective control.* Within a century in our own country, the franchise has been made universal. Our government is a representative government in form; in fact, it is coming every day closer to a type of direct government controlled by the great masses of the people. It is this

variety of democracy that has lately spread through the world. It is this variety of democracy that was imperiled in 1914 and saved in 1918. *It cannot now be a question of going back to an earlier form of social control.* It is now, as it has never been before, a "race between education and annihilation." If education is to save civilization it must lift the common man to new levels—and not so much to new levels of industrial efficiency as to new levels of thinking and feeling. . . .

There is, however, a factor connected with this matter of "leadership" that merits the most serious attention. The qualities that make for democratic leadership, far from being exclusively intellectual qualities, are not even predominantly so. They are rather "human" qualities, such as sympathy, tact, humor, and sociability, and "moral" qualities, such as integrity, industry, persistence, courage, and loyalty. . . .

The proposal to apply the intelligence tests in selecting at an early age those who are to be the later leaders of the nation has received a sanction, and in my humble judgment a most specious sanction, from the unquestioned success of the tests in the Army. In picking out the men who are better able than their fellows to learn new duties quickly, tests which measure this capacity have an obvious value. In how far these men owed their superiority to innate traits and in how far to education, we have now no certain means of knowing, although the determinist is as usual cocksure that education had nothing to do with it. Be that as it may, to argue from the situation in the Army to the situation in the nation as a whole overlooks a very important difference. The personnel of the Army does not choose its own leaders; the personnel of the nation does. The personnel of the Army does not pass final judgment on the plans and policies that the Army seeks to realize; the personnel of the nation does. . . .

The determinist admits that skillful and devoted teachers can do something even with morons. As I watch these teachers at their work it is not what they can not do that impresses me, it is rather the miracles that their consummate art enables them to perform. I have seen dull eyes lighted with a momentary gleam of intelligence. It was a little light in a world of darkness. But grant that little light glowing with rapidly increasing intensity as we go up the intelligence scale, and my case is won. A little more light for the common man this year, next year, a hundred years from now, and the battle for humanity, for democracy, and for brotherhood is won.

EDUCATIONAL DETERMINISM ⁵

BY TRUMAN L. KELLEY

It is with ardor that I open my educational periodicals nowadays and hasten to see if Bagley or Terman or lesser lights have a contribution upon Democracy and the I.Q. Although what I find is keenly interesting I am, nevertheless, grieved, for I know that my former teacher and my present colleague, each of whom I sincerely respect and highly honor, are both "battling for the Lord," and that they ought to be shoulder to shoulder in the fight. I find myself in sympathy with Bagley's belief in democracy and with Terman's insistence upon the reality and consequence of innate and acquired individual differences.

It is not my purpose in writing this article to attempt to mediate between two such doughty opponents. It is both safer and more in harmony with my beliefs to take one side. I do hope, however, to point out certain common grounds between Terman and Bagley, to define, at least in part, their differences, and to show that the collective betterment of the common man demands the recognition of individual differences in educational processes.

Such items as can be salvaged from the storm seem to indicate that Bagley and Terman agree: (1) that there are important innate and also important acquired individual differences; (2) that the collective improvement of mankind is the highest purpose of education; and (3) that educational and intelligence tests are valuable instruments if properly used. They disagree: (1) as to the relative importance of innate and acquired differences; (2) as to the best means for bringing about a collective improvement; (3) as to what constitutes a proper use of test scores; and (4) as to the confidence to be placed in test scores.

Though it is possible to say with some certainty that these disagreements hold, it is very difficult to define them more accurately. If in attempting to do so I err in any important respect, it is to be charged to lack of definiteness in expressed points of view or dullness in comprehension upon my part. The task, however, is worth attempting; but since I am consulting neither of the men, the reader must understand that my statements have not been approved by either of them.

⁵The *Journal of Educational Research*, VIII, 10-19. June, 1923. Abridged.

Disagreement (1).—Let us define the social value of a person as being a composite of his ability and inclination to render social service, and express the amount of this trait in any individual by the symbol V . In the case of a child we may think of V as potential social value, the actual service to be rendered later, provided the child lives. Preceding any given experience in a person's life he is possessed of a certain amount of achieved intelligence and inclination to render social service. Let us call this A . Following the experience he has the amount already designated V . The amount V differs from A on account of the experience and is due to H , an hereditary cause, and E , an environmental cause wrapt up in the experience. Thus,

$$V = A + pH + qE \quad (1)$$

or, the accretion in social value due to the experience is

$$(V - A) = pH + qE \quad (2)$$

In these equations the proportion of this growth due to heredity is p and the proportion due to nurture is q . At birth heredity is dominant so that, $p = 1.00$ and $q = 0$. With increase in age, q gains in importance and p loses, leading to a final adult condition which, according to Bagley, I would expect to be about, $p = .20$ and $q = .80$, and according to Terman, $p = .80$ and $q = .20$. Here then is a very important difference in emphasis. This question can only be settled by very careful measurement, such as Thorndike's Measurements of Twins, incorporating, in addition to measurements of ability, measurements of inclination to render social service.

Disagreement (2).—There are two distinct theories as to the way to bring about the best and most rapid collective improvement. The first is that the youth of the land (barring the feeble minded) should be given a common fundamental education extending throughout the compulsory school attendance period; and that this education should provide, in the matter of language, political, social and scientific history, and democratic foundations and aspirations, a common understanding which will bind our citizenship into a homogeneous nation, dedicated to the increase of the collective good. The other view is that the individuals are born different and grow more and more different every day and that if innately different individuals were warped by processes of education into a common mold it would be at the sacrifice of the greatest talent and to the immediate detriment of the entire group. The proper education for such innately different indi-

viduals is a differentiated one in which task is adjusted to talent and social need. I am sure that Bagley inclines toward the first view and Terman towards the second, though I do not believe my statements would completely satisfy either one as descriptive of his position. Professor Bagley affirms a belief in individual treatment under certain conditions, but I have not discovered a delimitation by him of the field in which such practice is warranted. Professor Terman does not deny (and from being a co-worker with him upon the Stanford Achievement Test I know he would affirm) the importance of common culture though I am not aware that he has, in print, emphasized this value or defined its extent. It may be that these two educational authorities are not nearly so far apart upon this matter as one would gather from recent articles. There can be an experimental solution to this question based upon careful measurements of results of different instructional procedures, after the purpose of education has been defined.

Let us define the purpose of education for a single generation to be the raising of the level of social welfare by the increase of the social value of every individual constituting the nation. Let us define the more ultimate purpose of education to be the holding of the gains of previous generations coupled with addition thereto. Personally I cannot conceive of this more ultimate purpose ever being progressively realized without the principles of eugenics operating either with or without conscious social direction. But since the value of the recognition of individual differences does not depend upon so remote a purpose, we may consider the question from the standpoint of a single generation. This is equivalent to considering the means for increasing the social value of each individual, whatever his status.

There can be no doubt that in terms of (potential) social value individuals differ from the day of their birth. Let us examine into this in more detail. Each act in the educative process, whether at home, on the playground, in the church, or at school, is a stimulus reacted to. Thus, an average child of ten presented in school with the following situations would grow as a result by different amounts: (a) a bit of colored glass; (b) a stick of candy; (c) a request to answer to " 7×8 "; (d) a book on the economic condition of Europe; (e) a request for the essential features of Kant's philosophy. Whether or not we know enough actually to put our thinking into practice, it is certain that we may think of stimuli as on a scale of merit for social value. Let us assume that the five

stimuli mentioned are in the proper order upon such a scale. The stimulus, "what are the essential features of Kant's philosophy?" is, *per se*, excellent, but as applied to the average 10-year-old it is as futile as a bit of colored glass. Thus the merits of stimuli from low to high as leading to an accretion in social value are, for a person with an assigned achieved ability, first zero, then small, then larger, reaching a mode at some point, then smaller and finally zero again. The precise nature of this curve we of course do not know, but as a reasonable guess and for the purposes of further discussion let us assume that the ordinates of a normal curve represent the extent to which successive stimuli "take," i.e., are appreciated by the person of the assigned achieved ability. There is for this person at the moment of life in question a certain stimulus which he attends to most readily. Let us call this his "natural" stimulus and give it the symbol N .

If at a given moment this natural stimulus is " 7×8 ," there is retrogression if the environment is so changed that the person attends to a "stick of candy," or a "bit of colored glass." Thus, stimuli below N in the scale have negative social value and stimuli above positive. Taking E as any stimulus, as earlier defined, $(E - N)$ is a measure of the stimulus in terms of social value for the person and moment in question. Let us call $(E - N) = x$. This is an asset if x is positive and a debit if negative. This is simply equivalent to saying that if the individual as a matter of outside pressure or instruction attends to less meritorious stimuli than he would attend to of his own inclination it is a retrogressive procedure and the corresponding x is negative, while if he is induced to attend to a stimulus which is more meritorious than N the process is educative and character building. Under the latter circumstances, x is positive. N will change from person to person, and for a given person from time to time, but for a given time and person there is a natural stimulus N such that E 's above it are elevating (positive) and E 's below it degrading (negative). We may now rewrite equation (2) and introduce the factor given by the ordinates of a normal curve which measures the likelihood of a stimulus taking effect. Remembering the equation of the normal curve,

$$y = ce^{\frac{-x^2}{2a^2}}, \text{ we have}$$

$$(V - A) = pH + qc \times e^{\frac{-x^2}{2a^2}}. \quad (3)$$

the symbol c standing merely for the numerical constant entering into the quotation of the normal curve need not concern us.

Since we clearly wish to make our instruction the most effective possible we wish to provide such a stimulus, x , as will result in the greatest accretion, i.e., make $(V - A)$ a maximum. The calculus solution is very simple and gives $x = \sigma$. We reach the very important proposition that the environmental stimulus which, measured in terms of the individual's personal abilities and inclinations, is one standard deviation above (in the direction of social value) his natural or passive ability and interest, is the most effective of all stimuli in augmenting his social value. We can, of course, place no certain credence in the exact value of one standard deviation, but that there is a stimulus somewhere and presumably in this general neighborhood, which is the optimum stimulus follows from the argument. It also follows that this stimulus differs with individuals as they differ in the achieved abilities which they bring to the situation. Further, this proposition is independent of the size of q so we may continue the discussion without attempting to reach a decision as to disagreement (1)—the relative importance of heredity and environment. It suffices for our present purposes to agree that neither p nor q is zero.

The concept that there exists a stimulus which is optimum for the time and person in question in bringing about development is so fraught with educational possibility that we need an experimental method for determining it. Undoubtedly discerning parents and teachers are apt in discovering these optimum stimuli, but even for them it may be of assistance if they will but note the difficulties and merits of the stimuli spontaneously reacted to, under certain environmental conditions, by their charges and thus locate the 84 percentile type of stimulus. With a normal distribution of interest this would be one standard deviation above the natural stimulus and even if the distribution of interest is not normal this stimulus would surely not be far from the optimum. The technique of instruction should be such as to exert a gentle pressure—we might call it a standard (deviation) pressure—in the direction of reaction to meritorious stimuli, and the consequence of such pressure should be a pupil keen, devoted and inspired by contact with parent or teacher.

Without carrying the algebraic notation any further, the reader who has followed thus far will plainly see that no amount of training of a certain constant degree of superiority applied to

individuals of different capacities will result in accretions of social value which are the same for the different individuals. The only way to bring those of varying talent to a common level would be to give the dullards the optimum stimuli as judged by their talents, the medium somewhat less than the optimum as judged by theirs, and the bright much less than their optimum. Though we, to a small degree, approach this by neglecting the capable and providing a really appropriate education for the retarded and feeble minded, we nevertheless do not generally serve our country so ill as this. Such a perversion of the idea of democracy is repugnant to one who believes that a child should have a square deal even though he happens to be more socially minded and more capable than the average of his fellows. Since differences exist at birth and since a common superior training (i.e., one involving superior stimuli) will not level differences in achieved ability, there is no way such leveling can be brought about except by a training progressively inferior as the children are superior. To tax each child to the optimum there should be a progressively superior training as social capacity increases.

In his failure to recognize this Dr. Bagley seems to me not to be a good democrat. Of course, in terms of purpose I do not question his democracy for a moment. I agree that there is national need for a common culture, but that a common method of instruction can bring it about or that this culture can include such gems as the philosophy of Plato, the analyses of Newton, the subtleties of Shakespeare, I do not believe. Professor Bagley states that we are confronted with a big fact, democracy. True; but human nature is a greater fact and should the two be incompatible there is no doubt which will prevail. As a statistician aware of the stability of the mean in a universe of widely scattering elements, I see not only no threat but great value, from the standpoint of progress and evolution, in encouraging variability of the socially valuable sort. Professor Bagley at one time expresses the belief that genius will take care of itself and at another that a superior child raised among pygmies will turn out a moron. I do not see how one can believe both of these, but why believe either? A cool-headed view would suggest that the superior child, like every other child, will worry along wherever he finds himself, but will grow the most in grace and virtue when the environment exerts a steady pressure and demand for the best that he can live up to.

Disagreement (3).—The attempt in the last several paragraphs

has been to point out principles which serve in answering the question, "what is the best means for bringing about collective improvement?" In doing this the answer to the third point, "what is the purpose of intelligence and educational test scores?" has been suggested. In brief, their purpose is to discover achieved ability and to assist in determining the type of stimulus which, for each individual, is the optimum. In the case of the dull and the feeble-minded, available measuring devices serve these purposes with surprising excellence and if superior intelligence devotes itself to the measurement and guidance of the average we may expect the creation of equally serviceable instruments for the handling of these problems. We must admit, however, that the prospects of a psychologist whose I.Q. is 140, drawing up highly reliable instruments for the guidance in advanced education of children with I.Q.'s of 150 is not very great. As a matter of common sense, teachers and principals should encourage individual initiative in the selection of studies in direct proportion to demonstrated ability. The child will commonly choose poorly, as witness the sporadic programs and spasmodic performances of even the more capable college students, but even so the advisor should refrain from positive advice, not because of a lack of need for it, but because of the lack of the necessary knowledge to be of service. Unfortunately, an advisor of I.Q. 140 will proffer advice with as much assurance to a child of I.Q. 150 as to one of 100 and herein is the occasion for merited ridicule. Ours is a young science and we have much to learn, including a becoming modesty and a certain reserve. I must leave the matter here for I can scarcely more than guess what Professor Bagley considers the legitimate function of tests and measurements.

Disagreement (4).—Here we have reference to the confidence to be placed in test scores. We may conclude that Professor Terman considers the best of our educational and mental measurements to be very valuable supplements to usual procedures, teacher's judgments, school marks, principal's opinions, etc., as a means of determining differences which are important in school situations; and we are not left in doubt as to Professor Bagley's confidence in them for he hails with enthusiasm every attack upon their validity. We may welcome such of these attacks as betray an understanding of the situation. We readily admit the point of such criticisms as have been made by men in the field—Colvin, Rugg, and Trabue. The real excellence of this movement is that such criticisms occur. As practiced by the best psychologists, it

is "scientific." This means that it forecasts situations; enabling a checking of forecasts with fruition and thus providing a means for discovering errors and determining probable errors.

THE EDUCATIONAL SIGNIFICANCE OF MENTAL TESTS *

BY B. H. BODE

The most striking development, within recent years, in the field of education is undoubtedly the movement known as mental tests and measurements. It had long been known that pupils differed widely in capacity. But these differences were based on impressions or haphazard evidence, not on objective and relatively simple tests. Now, however, the scientist has invaded this field and has demonstrated that, even here, the application of scientific tests is not beyond the range of possibility. Already we speak familiarly and fluently of mental age and I.Q., which are the symbols of increased refinement in judgment. That the achievements of mental testing will have an important bearing on educational practice in the future is scarcely to be doubted.

It is still too early, perhaps, to forecast accurately the significance of mental tests. But the early reports that are coming back from this new scientific firing line are startling enough to cause wonder and fear. We are told that 25 percent of the population is subnormal, that the average mentality of the nation is slightly over thirteen years, that only 15 percent are fit to go to college, and that 60 percent of the whole population is poorly adapted—or worse—for high-school work. In the face of such returns, we can no longer dismiss Carlyle offhand as a dyspeptic grouch when he says, "England has a population of twenty-six million, mostly fools." On the surface, at all events, the facts constitute a magnificent vindication of Carlyle's insight. To be sure, he did not undertake to prove that the I.Q. remains constant, but we would probably have regarded this constancy as a self-evident fact; and, anyhow, this point has been covered by the researches of our scientists. But if we go as far as this, is not Carlyle justified in his scorn of democracy and the popular ballot, on the ground that the multiplication of ignorance and foolishness cannot produce wisdom?

To some observers it seems abundantly clear that a revision of our conceptions of democracy and of education is logically inevi-

* The *Journal of Educational Research*, VII, 91-99. February, 1923.

table. It is predicted that the mental tests will eventually be used to select certain people as members of an intellectual aristocracy, in order that they may be trained for positions of benevolent autocracy over their less fortunate fellow-citizens. President Cutten of Colgate University, for example, presents an outline of such a scheme, which he calls "The Reconstruction of Democracy."^{6a} Perhaps a social reorganization of this general character will eventually result, but the zest with which these theorists engage in the work of reconstruction is hardly reassuring. It suggests considerably more fondness for reconstruction than for democracy. To see democracy thus being reconstructed becomes painfully reminiscent of the young lady who smiled as she rode on the tiger. As in the case of the young lady, democracy is finally reconstructed so extensively that its presence is no longer discernible by the naked eye.

The question, however, is not what we should like, but what the facts dictate. We of the present generation have been trained into a reverential attitude towards science. Our outlook upon the world is determined essentially by the findings of science, which we accept largely on the basis of authority. When a fact is established scientifically, our sense of intellectual and moral integrity requires us to acquiesce. But we have also learned that it is not always easy to distinguish between fact and inference. The facts may blend so intimately with assumptions, inferences, and anticipations that the innocent bystander is likely to accept the whole composite as a deliverance of science. When it was shown, for example, that all our conscious experiences are cerebrally conditioned, it was regarded by some as proved that "the brain secretes thoughts as the liver secretes bile," or even that the mind is nothing but a physical process going on in the brain. When new discoveries are made, it may be exceedingly difficult to determine just what it is that has been proved.

Let me try to be more specific. Perhaps the evidence is sufficient to prove that the I.Q. tends to remain constant. Perhaps it is possible to predict with reasonable accuracy how well a pupil can do the work in the various grades, and which point, approximately, will represent his educational "farthest North." These are matters concerning which I do not pretend to have expert knowledge and which I do not desire to call into question.

^{6a} George B. Cutten. "The Reconstruction of Democracy." *School and Society*, XVI, 477-489. October 28, 1922.

But the significance of this limitation is a different matter. The proof of such limitation does not necessarily warrant the inference that certain pupils should be assigned to vocational training, and that certain others should be especially trained for leadership. The only conclusion that is warranted is that some pupils are not capable of profiting beyond a certain point by our present curricula and our present methods of teaching. Apparently we have gone on the assumption that our present curricula and teaching methods represent, not merely the chief, but essentially the only road to the ideal of a liberal education. If this assumption should prove to be questionable, then, in the language of the race-track, "all bets are off," and it becomes necessary to take another survey of the facts before we make a move.

What is the primary purpose of public education in a democracy? We have told ourselves, in season and out of season, that the cultivation of common traditions and aspirations is indispensable, if our democracy is to endure. There must be understanding, and the sympathy and coöperation that spring from understanding, or there can be no safety in the future. Our first obligation is to learn how to live together. This, I take it, is the democratic conception of a liberal education. It subordinates utilitarian interests to the great aim of making men human through the cultivation of a common life. This aim we are now called upon to reject, because the mental tests indicate that the majority of the population are not well adapted for secondary and college education. Before we allow ourselves to be stampeded by alarmist utterances, it would be worth while to inquire whether our secondary schools and colleges, as now constituted, are indispensable means for this end. We might inquire, further, whether, as a matter of fact, these educational agencies were created and organized with primary reference to the democratic ideal of education.

If we approach the matter historically, we need not go far to discover that the college, at all events, was not conceived in the spirit of democracy. The same may be said of the secondary schools, in so far as these were subject to the dictation of the college. As Dorothy Canfield remarks in her recent novel, "Rough Hewn," the preparatory school "realized the ideal of the eighteenth century educator who felt that the only safe upbringing for boys would be to shut them up in a barrel, between the ages of twelve and eighteen, and feed them through the bung-hole." People who argue that we must begin to conduct our educational

activities on the basis of an aristocratic ideal do not seem to realize that this is what we have been doing all the time. At the upper end of the educational scale, certainly, the general trend, in so far as it was directed by a conscious ideal, has not been towards the cultivation of wider comprehension and wider sympathies, as regards the concrete, practical affairs of life, but away from them.

Fortunately, the public high schools did not submit to the jurisdiction of the college with complete docility. It was felt all along that there was an important difference between preparation for life and preparation for college. The revolt, however, has brought other evils and other dangers. The present-day movement in the direction of vocational education springs largely from the mistaken notion that preparation for life is identical with preparation for a vocation. Unless we bear constantly in mind that public education has no proper concern with vocation at all, except in so far as training in vocation may serve to promote the ends of democracy, this whole vocational movement will play directly into the hands of the enemy. It will mean a practical acceptance of the view that advanced education should be limited to the chosen few, and that the rank and file are to be predestined by their training to become uncomplaining hewers of wood and drawers of water.

We have heard much of late years about individual differences. The recognition of these differences is, without doubt, of tremendous educational significance. But what, precisely, is their significance? We are disposed to assume that, if a boy has marked mechanical ability and does not care much for books, he should be set apart for a vocational education. But what is to prevent us from training this ability so that it will become a basis for the development of shared interests and shared aims, in accordance with the ideal of democracy? Agriculture and home economics, for example, may both be used to give insight into the human significance, not only of these subjects, but of chemistry and geography; mechanical construction and commercial relations may both serve as a gateway to a wider appreciation of human relations as involved in numbers and in the origin and quality of materials. Pupils who have neither taste nor aptitude for the expertness of the academic specialist may make real progress along such lines. The real teacher, like the real missionary, is all things to all men, in order that all may be brought into the educational Kingdom of Heaven. The recognition of individual differ-

ences should mean simply that the means must be various, although the end is one. But, as a matter of fact, the recognition of individual differences has led to the inference that the end was all a mistake and that it is the duty of the educator to accept as a limitation what he should regard as a challenge, if not as an opportunity.

It will be said, perhaps, that all this is but an attempt to blink the fact of individual differences in intelligence. When people begin to talk about democracy they create a haze of sentimentality in which it is easy to lose sight of the disagreeable fact that the educator is as incapable as anyone else of making a silk purse out of a sow's ear. "What is preordained by the protozoa can not be changed by act of Parliament." There are levels of intelligence, certainly, of which nothing much is to be expected. I have no desire to gloss over this fact. My concern just now is with the contention that there is a difference between saying that the bulk of the population is not well adapted for meeting the requirements of our high schools and colleges and saying that they are not to be nurtured in the mental outlook, the traditions, or ideals which constitute our common heritage. Nothing short of this is democracy. And I submit that there is nothing in the results of mental testing which shows this to be an impossibility.

It was Burke, I believe, who said at the time of the American Revolution that "you cannot indict a nation." A standard that leads to such a result has something the matter with it. At any rate, when we are told, or seem to be told, that the average man is deplorably below the average, the argument somehow fails to carry conviction. The outsider, if he is reflective, tends to become confused, and he is likely to feel thankful that the mental testers did not have an opportunity to search him personally for this thing called intelligence. Perhaps it is true that, judged by the mental tests, this is a nation of thirteen-year-olds. Perhaps something similar would be found true if the population were to be judged by college standards. But when such results appear, it does not follow that the time has come to abandon democratic ideals of education. It does not follow that the rank and file of the population must be consigned to vocationalism, on the ground that this is their only opportunity to "make the most of themselves." What we need to do is to find out more precisely what it is that is being measured.⁷

⁷ Cf. Dr. W. C. Bagley's brilliant article, "Educational Determinism," in *School and Society*, XV, 373-84, April 8, 1922.

There is reason to suspect that the development of mental tests and measurements has brought with it a recrudescence of faculty psychology. Some writers, indeed, openly claim that intelligence is a single thing. The majority, as far as I can make out, refuses to commit itself on this point, and tries to "play it safe" by using such phraseology as the "capacity to handle abstractions," or "the ability to learn." But the evil delusion may conceal itself behind the verbiage, and it may be much strengthened by the evidence which points to a tendency of the I.Q. to remain constant. The pessimism that has been generated by the results of mental testing is probably due primarily to the assumption that intelligence is a fixed and changeless thing. We can gauge the approximate amount of intelligence as we can record the position of the fixed stars, but there is nothing that we can do about it. As Thorndike says, however, "It is probably unwise to spend much time in attempts to separate off sharply certain qualities of man, as his intelligence, from such emotional and vocational qualities as his interest in mental activity, carefulness, determination to respond effectively, persistence in his efforts to do so; or from his amount of knowledge; or from his moral or esthetic tastes. Even so apparently remote a trait as muscular strength may in some cases coöperate almost indistinguishably in the production of what we would call intellectual products. Thus a great scholar's achievement may be in part due to eye muscles which help making reading a pastime."⁸

Taken superficially the facts involved in mental testing may be explained either in terms of a single intelligence or from the standpoint that intelligence is a composite affair. Terman, for example, tells us that "Some children with I.Q. as high as 75 or even 80 will have to be classified as feeble-minded; some as low as 70 I.Q. may be so well endowed in other mental traits that they may manage as adults to get along fairly well in a simple environment."⁹ Here the suggestion is conveyed that intelligence is a single thing, and that the shortcomings of intelligence may be compensated for by the operation of "other mental traits." Conversely these other traits may interfere with the processes of intelligence, as in the case of the ten-year-old boy with an I.Q. of

⁸E. L. Thorndike. "Intelligence and Its Measurement: a Symposium." *Journal of Educational Research*, XII, 124. March, 1921.

⁹L. M. Terman. *The Measurement of Intelligence*. Houghton Mifflin Company, 1916. P. 87.

about 125 who "was once diagnosed by a physician as feeble-minded. His behavior among other persons than his familiar associates is such as to give this impression."¹⁰

This interpretation is natural and obvious. But it does not preclude the view that these "other mental traits," such as moral traits, industry, emotional qualities, and the like, are component elements in a total behavior which in its totality is called intelligence. This use of the word intelligence is justified, if by intelligence we mean the ability to exercise foresight and to use the things in our environment as means to ends; or if by intelligence we mean the ability to learn the meanings of things in terms of what can be done with them. But if we take intelligence in this sense, the I.Q. with which the mental testers deal does not measure general intelligence. It measures a more specialized ability or set of abilities, such as the ability to deal appropriately with the characteristic objects of a school environment.

As between these two views it ought not to be difficult to choose. The "pure reason" of philosophers and the "faculties" of traditional psychology carry too heavy a load of odium to make the conception of "general intelligence" attractive or plausible. To assume that when we have ascertained a person's I.Q. on the basis of a standard test we "have measured some general power which resides in him and determines his ability in every variety of intellectual task in its entirety is to fly directly in the face of all that is known about the organization of intellect."¹¹ The assumption that we are dealing with a single thing and an unchangeable thing will hardly bear critical examination. The improvement of any one of the numerous factors which may enter into intelligent behavior is, so far forth, an improvement of intelligence. The evidence that the I.Q. remains constant is inconclusive on this point. It simply shows that intelligence does not change appreciably in certain simple types of situations from which the operation of factors that would be likely to make a difference have been excluded.

Let me now try to relate this general conclusion to our previous discussion. If intelligence is not a single thing, we seem to gain a new perspective on the educational significance of "mental age" and of the I.Q. These concepts, as developed in present-day tests, do not stand for hard and fast measurements or educa-

¹⁰ *Ibid.*, p. 103.

¹¹ Thorndike, *op. cit.*, p. 126.

bility; and in particular they do not warrant the inference that the democratic ideal of education must be abandoned for any considerable portion of the population. The significance of these tests is rather that there are various kinds of grist for the educational mill. To quote again from Thorndike: "Consider a score attained by a 12-year-old boy in say a combination of Stanford-Binet, National A and B and Haggerty Delta 2 (two trials of each). If the boy has had ordinary American opportunities, this score will prophesy rather accurately how well he will respond to intellectual demands in the case of 'book-learning' at the time and for some years thereafter, and very possibly for all his life. It will prophesy less accurately how well he will respond in thinking about a machine that he tends, crops that he grows, merchandise that he buys and sells, and other concrete realities that he encounters in the laboratory, field, shop, and office. It may prophesy still less accurately how well he will succeed in thinking about people and their passions, and in responding to these. We know that, taking people as we find them, the ability measured by verbal tests is not the same as the ability measured by non-verbal tests, and there is reason to expect other similar specializations."¹²

The mental tests are unquestionably valuable for certain kinds of classifications and predictions. Their use, however, should not blind us to the fact that life is a garment of many hues. Thinking may occupy itself with many varieties of facts and relations, and it may occupy itself with these in various ways and with varying degrees of skill. The results of the mental tests have given new evidence for the view that education must take account of a much greater range of interests and abilities than it has done in the past. But these results have contributed nothing to shake the conviction that education in a democracy is under obligation to build upon these various interests and abilities a superstructure of common faith and common knowledge. The fulfillment of this obligation means the realization of the democratic ideal of liberal education, the ideal to which our national history has irrevocably committed us and which embodies our most cherished conceptions of organized social living.

¹² *Ibid.*, pp. 125-126.

THE CASE FOR THE LOW I.Q.¹³

BY J. L. STENQUIST

Illustrious school failures. Cases in which illustrious (not to include "merely successful") men and women were, while in school, diagnosed as failures by their teachers have often been cited. Many of the men and women, who later became world authorities in their fields, were called at best but mediocre. Linnæus' gymnasium teacher told his father that he was unfit for any profession. Yet this boy later was to revolutionize the science of botany.¹⁴ Charles Darwin says in his autobiography that he "was considered by all his masters and by his father as a very ordinary boy, rather below the common standard of intellect." Napoleon Bonaparte in the final examination at his military school stood forty-second in his class. We may well ask with Swift, "who were the 41 above him?" Robert Fulton was called a dullard because his mind seemed filled with things outside of school. Priestley, the great chemist, had "an exceedingly imperfect education." Pasteur "was not at all remarkable at school. Books and study had little attraction for him." M. Pierre Curie, late professor of physics at the University of Paris, with his wife, co-discoverer of radium, "was so stupid in school that his parents removed him and placed him under a private tutor." Such a list as this could, if space permitted, be continued to great length. Many men who to-day are national or world figures, but who had a poor school record, could be cited.

Granting that these cases constitute but a minority—and granting also a certain tendency to exaggeration by biographers who love contrasts—these cases are still too numerous and important to be ignored. The fundamental fact remains that the abilities of many pupils are widely misjudged in school, and abilities are either unperceived or misunderstood because of arrested development, poorly suited courses, stereotyped curricula, or general lack of sufficiently broad means for estimating ability.

No claim is here made that *all* so-called I.Q.'s are misjudged—only that *many* are.

The large percent of low intelligence. That a great majority of pupils who enter the first grade drop out even before the end of

¹³ The *Journal of Educational Research*, IV, 241-254. November, 1921. Abridged.

¹⁴ Citations are from Swift: *Mind in the Making*, Chapter I.

the first year of high school is well known. Strayer's study of 318 cities quoted by Terman shows that of those who enter the first grade, on the average only 37 percent enter the first year of high school, 25 percent the second year of high school, 17 percent the third year, and 14 percent the fourth year. Studies by Ayres and Thorndike also show the same general tendency. Terman says: "It is not uncommon for one-third to drop out without finishing the first year of high school." Retardation and elimination figures from every city annually offer additional testimony of the same general facts in elementary as well as in high schools. Terman believes that "not all of this elimination is traceable to inferior mental ability, but that a large part is due to this cause there is no longer room for doubt." With this general statement all will, of course, agree. The question, however, of just how much is due to actual lack of intelligence in its broadest sense, we do not know. Terman presents much evidence to show that with the use of general intelligence tests pupils who have low intelligence and who will drop out can be largely discovered beforehand.

But a situation in which over 80 percent of the pupil population is eliminated before reaching the goal is not greatly helped by the statement that most of the pupils who thus are eliminated haven't the general intelligence to proceed further. Is it not rather an indictment both of the curricula, *and* of the tests (which select too much on identical bases)? Terman suggests the query, "Are high school standards too high?" We might also ask are they too narrow? Or, in general, too far removed from the kinds of mental capacities of pupils? If such great numbers of the school population haven't the kind of ability we call general intelligence, why call it general?

What is general intelligence? Certain it is that the term general intelligence is sorely in need of definition, for by the average person, and even by a large number of specialists in educational measurement, it is accepted at face value to mean just what it says. But is it not a loose use of terms that permits us to use the name "general" intelligence to designate mental traits which are painstakingly limited to the literary-academic tasks of our present intelligence tests? Are we not misleading when we say that he, and (in effect) *only* he has general intelligence, who, with paper and pencil, can effectively do such things as, solve simple problems in arithmetic, state the opposite for each of a list of words, insert a number of deleted words in sentences, arrange words in certain logical relationships, decide whether a given number or word is

identical with another, write the seventh letter of the alphabet, arrange a jumble of words to form meaningful sentences, make a cross that "shall be in the circle but not in the triangle or square," state which day comes before Sunday, write whether a sentinel should be trustworthy, indicate whether alliteration is a form of pentameter, show whether cessation of belligerency is ever desirable, declare "what one should do if it is raining when we start to school," repeat "we are having a fine time. We found a little mouse in the trap," repeat "3-1-7-5-9," give the greatest possible numbers of words in one minute which rhyme with "day," or any combination of such tasks that may occupy the 30 to 45 minutes given to an average present day intelligence test!

What sort of mentality has the individual who makes a low score in such tasks but who when he drops out of school has the ability to organize a gang that is all but undissolvable? Or who drops out of school and builds up a world-wide business on the identical ground where "brighter" men have failed? Or who can wrest from a Robinson Crusoe situation a triumphant career? Or even he who can start a balking automobile abandoned by "superior" persons—men of higher I.Q.'s? Or what shall we say for the lamented low intelligence of the New York boy who escaped from an institution for mental defectives and who before the authorities recaptured him had obtained and was holding a job paying him \$37 per week as a foreman in a blacksmith shop?

To say that there are but few such cases is untrue. Even though the illustrious cases do constitute but a minority, who shall estimate how many more of that large percent who drop out of school because it is unsuited to their needs would develop careers of marked usefulness, if their real abilities were discovered and trained?

To say that such persons as those cited (except, perhaps, such cases as the last mentioned) are not possessed of general intelligence is to quarrel with words. Though they may classify as "low I.Q.'s" by present-day intelligence tests, surely we are on uncertain ground if we take such results at face value and consider the cases closed.

It is a question of what our tests measure, a question of what we mean to include under the term general intelligence.

If we examine the type of criteria by which nearly all these tests are justified, we find that they consist in the last analysis essentially of teachers' estimates of pupils' ability in school, plus records in other academic tests. But our major contention is pre-

cisely that for many children the teachers' estimates and their academic record is merely an estimate of success in bookish tasks, and that here it is that fallacies of intelligence ratings creep in.

It is submitted that these intelligence tests, at best, detect only those academic qualities of pupils which are noted by teachers, and which, it is freely granted, are of great importance for success in ordinary school curricula, but which do not constitute the whole of general intelligence. Of this our abler investigators¹⁵ are fully aware, but the average giver of tests is not aware of it; or, if so, he overlooks it.

Other kinds of intelligence. As a matter of fact, it seems clear that intelligence may be of many kinds. Thus, for example, the campaign manager exhibits a quality differing sharply from that of the locomotive engineer; while the kind of intelligence required to lay out the construction work of a Woolworth Building is not very like that needed to write a forceful letter, and this in turn is not very like that employed in painting a great picture, or inventing a great machine such as the modern linotype.

While it may be true that a certain minimum body of "common sense" mental ability, and *some* general academic information underlie all such activities, we know from at least a few correlations obtained (one of which appears later) that the relationship is not very close—though it is, to be sure, positive.

If we had trustworthy criteria of ability in social leadership and in the various political and mechanical arts and sciences, it might be possible to devise intelligence tests that would be more nearly "general" than those we now have. This, however, is a more difficult matter than to devise tests of academic ability. Again, while to measure in this wide sense the present general intelligence of our school population represents a heavy task, to prognosticate its *potential* ability would be a truly Herculean undertaking. But this is not equivalent to saying that it can't be done. Much of the same methodology and technic which we already have would apply, and progress in this direction may be looked for. Current literature is already sprinkled with discussions of the limitations of what our present so-called general intelligence tests measure.

General intelligence and mechanical ability—results of tests.

¹⁵ E. L. Thorndike. "Tests of Intelligence, Reliability, Significance, etc." *School and Society* v. 9, February 15, 1919; V. A. C. Henmon, "Measurement of Intelligence," *School and Society*, v. 13, February 5, 1921.

The tests of mechanical ability herein described may serve as an example and case in point, showing another type of intelligence and also emphasizing the need for clearer definition of just what we mean when we say a child has but little general intelligence.

During 1919-1920 several hundred boys in a New York City public school (P. S. 64, Manhattan) were given a very exhaustive intelligence rating by means of the combined results in the following well-known tests:¹⁶

A. The intelligence tests

National Intelligence Test A and B
Haggerty Intelligence Test, Delta 2
Otis Intelligence Test
Myers Mental Measure
Thorndike's Visual Vocabulary

The results of these six tests were pooled, given equal weight to each, and the final rating was called the composite intelligence score. These boys were next given a series of mechanical tests, consisting of the following:

B. The Stenquist mechanical tests

Assembling Series I: Ten unassembled commercial mechanical articles in a $5 \times 2\frac{1}{2} \times 24$ inch box, divided into ten compartments, to be assembled; these include a cupboard catch, an ordinary clothespin, a three-piece paper clamp, six links of ordinary safety chain, a simple bicycle bell, a shut-off clamp (used on rubber tubing), an ordinary wire rubber stopper (such as is used on pop bottles), a push button, a simple three-piece lock, and a mouse trap.

Assembling Series II: Ten more articles like the above, consisting of a four-piece elbow catch (used on almost every cupboard door), a rope coupling, a toy pistol, an expansion nut, a window sash fastener (such as is commonly found on windows), a simple pair of calipers, an expansion four-piece rubber stopper for bottles, a four-piece paper clamp or clip, a double hinge (such as is found on every screen), and a simple lock.

¹⁶ J. L. Stenquist. "Better Grading Through Use of Standard Mental Tests," Bureau of Reference, Research and Statistics, Board of Education, New York City.

Picture Test I: Consisting of 78 picture-matching problems in which the pupil is required to determine which one of five pictures belongs with, or is a part of, one key picture. The pictures treat general mechanical subjects such as mechanisms, tools, toys, machines, and their parts.

Picture Test II: This is similar to Picture Test I, but involves some language. Sixty questions are included referring to numbered parts of machine. These call for a certain type of mechanical reasoning, requiring the ability to think in terms of mechanical problems. Seventeen questions are devoted to matching pictured parts of mechanical toys.¹⁷

These mechanical tests inter-correlate on the average between 0.6 and 0.7. One test of actual manipulation of objects, such as Series I, correlates about as high with either of the picture tests as it does with a second series of models to assemble. On the whole, any one of the four tests affords an important indication of a general ability that may for convenience be called "general mechanical aptitude"—general in the sense that it does not pertain to any special trade, and mechanical, as is more or less obvious, from its nature.

Comparison of results. If we now compare the results in the two types of examination we may observe the following points:

As to the correlation between the Assembling Test, Series I, and the composite intelligence score, $r = 0.23 \pm 0.04$, for 267 seventh- and eighth-grade boys. Between Assembling Test, Series II, and the composite intelligence score $r = 0.34 \pm 0.06$ for 100 seventh- and eighth-grade boys. Between Picture Test II and the same intelligence rating $r = 0.34 \pm 0.03$ for 296 seventh- and eighth-grade boys.¹⁸

If we now combine all of the four mechanical tests into one

¹⁷ J. L. Stenquist. *Measurements of Mechanical Ability.*

¹⁸ The corresponding r -value for Picture Test I was computed for a presumably greater spread of talent—namely, for a group including sixth-grade boys as well as those of the seventh and eighth grades. The resulting value of r (which was 0.52) is not therefore comparable with the figures given in the text.

average T-score,¹⁹ and correlate it with the same intelligence rating, we find r drops to 0.21 ± 0.04 for 275 seventh- and eighth-grade boys.

The important inference to draw from these results is not with regard to the exact coefficients obtained, but with regard to the general fact of low correlation between the two kinds of ability here represented. Results obtained in the army for over 14,000 men bear out the same general fact.

The validity of the measurements. The validity of a test deals with the question of what it is that it measures—i.e., with correlations with criteria.

The question of what the intelligence tests measure has already been dealt with. As to what the mechanical tests measure we may first cite the correlations which have been found in comparing mechanical test scores with pupils' ranks in shop courses and in general science courses. The following instances are cited for the Assembling Tests and shop work:

27 boys seventh and eighth grade, between test and shop rank,	$r = 0.83$
15 boys eighth grade	$r = 0.80$
24 boys eighth grade	$r = 0.42$
14 boys sixth and seventh grade	$r = 0.81$
18 boys sixth grade	$r = 0.90$
17 boys sixth grade	$r = 0.88$

The following correlations were found for the Picture Tests and shop work:

27 seventh and eighth grade boys, between test and shop rank,	$r = 0.83$
53 high school	$r = 0.53$
14 sixth and seventh grade	$r = 0.51$
18 sixth grade	$r = 0.59$
17 sixth grade	$r = 0.59$
27 seventh and eighth grade	$r = 0.84$

Correlations of the same order of magnitude were found between estimates of teachers of general science and scores in the mechanical tests. These correlations are all subject to chance errors *which reduce them*. The true correlations are therefore higher.

¹⁹ T-score is the S. D. equivalent for distribution of twelve-year-old boys, with zero considered at -5 S. D. See Wm. A. McCall *How to Measure in Education*; "A Uniform Method of Scale Construction," *Teachers College Record*, January, 1921.

Shop teachers' ranks are, of course, no better than regular teachers' ranks which have been criticized in the previous section. But there is every reason to believe them *equally good*, and the same may be said of the judgments of science teachers. Were other and better criteria available these estimates would be excluded. In several of the above instances the average rank given by two shop or science teachers (intercorrelating 0.88 or better) were used.

The mechanical tests may, therefore, be judged from these figures to detect to a marked degree the same qualities in pupils that are considered by shop and science teachers in judging pupils' relative abilities. What is it that causes a pupil to stand out in this type of work? May it not be another type of intelligence that might well be called of *general* importance?

The second way of deciding what these mechanical tests measure is the very direct one of merely looking at the tests and judging what type of task it is that has been set up. Thus we may not at once say that they represent an attempt (in all except Picture Test II) to get away from words. They deal with concrete and real things, as against descriptions of things. In the Assembling Tests opportunity is given to work with hands and mind, rather than to perform with a pencil only, or to juggle mental abstractions.

The relative importance of these two kinds of ability. Of the relative importance of each of these two types of ability, readers must form their own conclusions. But it should be kept in mind that we are living in a world that is dominated on every hand by every known form of mechanical device and machine. Every moment of present-day life is influenced directly or indirectly by the products of mechanical skill and genius. Is it not important that ability in this field should be discovered and developed? Rather than merely to dismiss our apparently stupid pupils as low in "general intelligence," and to relegate them to some convenient class, our time might profitably be spent in disclosing other kinds of intelligence of which they may be possessed.

Possibly it would be more appropriate to designate these mechanical tests by some other name for they are mechanical only in a limited sense. On the mental side they call for the ability to recognize parts of ordinary mechanical devices, for the ability to make judgments as to the reasons for the particular size, shape, weight, and nature of the parts—in short, for the mental ability to think through in some degree the same steps as those employed

by the designer of each machine. Manually, they call for the dexterity required to put parts together to form the completed machine or device after it has been decided how they should go. Much of the performance of a typical child is, of course, mere trial and error manipulation, in which he hopes somehow "to make the thing work." But the nature of the various models is such that only a very low score is possible for the individual who depends merely upon thoughtless manipulation of the parts. A generous amount of the best kind of thinking is thus required to make a high score. It involves accurate perception, reasoning, and judgment applied to each model. In so far, therefore, as these mental processes are of general importance in every-day life, the ability demonstrated in assembling these models perfectly could well be called general intelligence.

Fictitious stigmata. There is a strong and universal notion that a low score in such tasks as have here been called intelligence tests constitutes a disgrace, that must be shunned at all costs. To fail to receive a high rating in intelligence is regarded as a calamity. This feeling has come about partly through the loose use of the term general intelligence, and partly through a distorted estimate of the rôle of intelligence in human conduct. Absurd as it may seem, there is a brief, and a reasonable one, which can be held for the I.Q. which is actually low—as well as for the supposedly low I.Q. For just as in man we find enormous individual differences in intelligence, so (fortunately) in the work of the world we find equally great variation in the character of the work to be done. As a matter of fact, the outstanding industrial tendency of the past decade has been to reduce the number of skilled jobs and increase the number of unskilled ones. The constant tendency of our modern machine age is in this direction, be it right or wrong. Again, consider the hundreds of thousands of menial tasks outside of industry that somebody must perform in every society. Is it not clear that happiness, contentment, and efficiency in such jobs are far more apt to come with a *low* I.Q. than with one that is high? Indeed, even when we consider the world's sweetest and most lovable characters, it is not always their high general abstract intelligence that makes the strong appeal. Haven't we in the academic atmosphere of our school-rooms come to value the intellectual side of human nature out of proportion to its real significance in life? Surely far worse calamities can befall the human animal than that of being pronounced of low intelligence. Physical disease, a crippled body, an insane

or actually feeble mind, with the multitude of tragic afflictions which this may imply—these and many other lamentable conditions which may befall should be kept in the background of our mind when we feel inclined to bemoan the lot of the stupid individual.

Summary. This account attempts to point out some of the fallacies that are prevalent in the present-day conception of intelligence tests. It recalls the many cases of illustrious men who were called school failures, and calls attention to the large percent of pupils who at present appear to lack sufficient mentality to carry on current curricula, and suggests the query "Is it the curricula or the mental ability of the population that is at fault?" It criticizes present-day intelligence tests as narrow and academic in scope, being based largely on school success; suggests the loose use to which the term "general intelligence" is often put; and maintains that there are in fact many other kinds of intelligence than are now being measured by tests of that name. As an illustration the results of a study of mechanical ability are offered. Here it is shown that at least 20 per cent of the pupils from a typical school, who are below average in general abstract intelligence, are *above* average in the kind of ability required in four mechanical tests, the detailed nature of which is described. It is submitted that such ability may be of quite as general importance as that required to score high in the abstract general intelligence tests, in view of the fact that present environment is so largely permeated with the fruits of mechanical genius and applied science. Finally, it is maintained that there is a strong, but wrong tendency to attach a stigma to pupils scoring low in so-called intelligence tests. Even for pupils whose true general intelligence is found after adequate testing to be low, there is ample opportunity for useful and happy lives—lives concerned with tasks for which they are, in fact, better adapted than are individuals of high intelligence.

WHAT CAN THE SECONDARY SCHOOL DO FOR THE STUDENT OF LOW I. Q.? ²⁰

By MARGARET M. ALLTUCKER

The following questions are here raised and discussed: (1) What percentage of the present high-school enrolment is of below average intelligence, that is, below 95 I.Q.? (2) How does the

²⁰ *The School Review*, XXXI, 653-661. November, 1923.

pupil of low I.Q. reach the senior high school? (3) Does the percentage of students of low I.Q. who are failing and dropping out of high school indicate that present high-school curriculums are not suited to their needs? (4) Do students leave high school for economic reasons or because of inability to succeed? (5) What are the minimum essentials in the way of an education that every person needs? What are the common aspirations and responsibilities? (6) Is there need for training for occupations in the lower vocational levels? How can this training be given? (7) What are some of the general principles on which to base differentiation of subject-matter in any course to meet the needs of the pupil of limited intelligence?

In a number of states the extension of the age of compulsory school attendance on either a full-time or a part-time basis has brought into the secondary school a large number of pupils who are below average in brightness, i.e., of low I.Q. Of fourteen hundred pupils entering the tenth grade of the Berkeley High School during the past two years, 26 per cent tested below average (i.e., below 95 I.Q.) according to the Terman Group Test of Mental Ability. A survey of the enrolment in the Berkeley junior high schools shows that the senior high school may continue to expect an equally large percentage of pupils of limited intelligence in the future.

Many of these pupils of low I.Q. take one, two, three, or even four years longer than the normal amount of time to complete the work of the elementary school and the junior high school. Many even then do not complete the regular course of study prescribed in these lower schools but move forward term by term in "limited" classes where differentiated and simplified work is offered. Finally, many of the C²¹ pupils and some of the D pupils reach the senior high school. Naturally, each consecutive grade of the public school acts as a graded sieve, sorting out term after term those who can succeed and profit by further standard academic classroom instruction such as is customarily offered in our public schools.

²¹ It is our practice in rating students to use the following seven-point scale: A, very superior, 130 I. Q. and above; B, superior, 115-129 I. Q.; C+, slightly above average, 105-114 I. Q.; C, average, 95-104 I. Q.; C-, slightly below average, 85-94 I. Q.; D, inferior, 70-84 I. Q.; E, very inferior, 69 I. Q. or below.

Table XXVIII shows the effect of this culling process in the senior high school.

TABLE XXVIII
ELIMINATION DATA FROM BERKELEY HIGH SCHOOL

GRADE	NUMBER OF STUDENTS *	G. I. Q.			PERCENTAGE OF STUDENTS BELOW AVERAGE
		Upper Quartile	Median Quartile	Lower Quartile	
Low 10	347	111	101	92	30.3
High 12	326	113	107	98	15.9

* The enrolment for the spring term of 1923.

A careful study of the case record of every "drop-out" from the Berkeley High School for the spring term of 1923 showed that 57 per cent of all of the "drop-outs" were below 100 I.Q.; 37 per cent were definitely below average in intelligence. Approximately 50 per cent were pedagogically retarded. While lack of ability successfully to master the subjects offered in the present high-school courses is by no means the only reason why students drop out of the senior high school, it appears to be one of the important reasons.

Some limited ²² pupils leave the public school to enter private schools, particularly business colleges, to which they are often attracted by the false notion that lucrative positions await them as soon as they have had six months' or even three months' training for which they pay a high tuition. Other "drop-outs" from the senior high school secure employment at unskilled labor. In many cases parents explain that they would be willing to finance their boys and girls through high school but that the children do not like school, are not succeeding, and want to go to work.

One boy very aptly explained his view of the situation by saying, "When a fellow goes to high school, at the end of every seven weeks he gets pieces of paper with the teachers' marks on them, telling how he ain't any good. When a fellow works at a job, he gets a slip of paper every Saturday noon with which he can buy things. Who wants to go to high school anyhow if he ain't going to college?"

²² In this article the word "limited" as applied to pupils is used to designate those pupils who do not seem to have the ability to do the work of the standard high school curriculum.

Two of the most serious and most urgent problems facing the secondary school to-day are (1) the better classification of students and (2) the modification of curriculums to meet the needs of students differing in capacity.

What the secondary school should offer students below average in intelligence can best be determined by a compilation of the salient points contained in the case histories of limited pupils. These should show, not only mental age as well as physical age, but also previous scholastic accomplishment, physical development and health, record of after-school and vacation employment, home and neighborhood conditions, the economic status of the parents as well as their plans for the child's future, and the pupil's interests and ambitions.

A study of the particular group of children which is to be educated is always one of the best bases for curriculum-making, provided this study is supplemented by a survey of the occupational opportunities of the community. The latter is sometimes as important as the former when vocational training is offered. To illustrate: A certain school board was perplexed as to what vocational training to offer a certain group of girls. They followed one of the customary methods of procedure in curriculum-making, namely, that of investigating to see what other schools were doing. They found that a trade school in a manufacturing city taught its girls to run power sewing machines. Forthwith they installed six power sewing machines and within six months had a group of girls trained to operate them skillfully. However, when the girls came to seek employment, they found that there were no power-machine operators employed within sixty miles of where they lived and that the wage paid for this work was usually so low that a girl could not be entirely self-supporting; hence she was obliged to live at home.

Thus we see that in planning for the education of the limited secondary-school pupil there are two factors to be considered: (1) the pupil's mental capacity and (2) his environment. Both of these considerations bring us face to face with the question, What are the minimum essentials of the education which every person should have in order to be a contributing, or at least a self-sustaining, member of a democracy? In other words, what are the common responsibilities that every individual should meet?

Coupled with this is the question, What are the aspirations, common to all, that differ only in degree between one individual and another and which every individual must realize if he is to be

content? It has been suggested that the following are the aspirations and responsibilities common to all:

1. Desire of everyone to take care of himself and be economically independent.
2. Desire to produce or create something. Along with this, there is a desire to couple up what one creates with a tangible reward. The elementary school is now emphasizing a type of tangible rewards through project-teaching. However, the secondary school, for the most part, gives only deferred values. The superior child appreciates these, but many other children do not.
3. Aspiration to be strong physically and to have complete control of one's faculties.
4. Instinctive desire for offspring.
5. Fundamental human desire for leisure.
6. Desire for a good name among one's fellows in a social group.

If these are the universal and the fundamental human desires and instincts, and if they are to be the bases for education, the public school must offer every child (1) training for work, (2) training for health, (3) training for parenthood and the care of children, (4) training for efficiency so that people will have leisure time, and when they have it, get both enjoyment and profit from it, and (5) training for social participation.

What does this mean from the administrative point of view? It means that there must be various levels of training with definite terminal points. This is in accordance with the thesis laid down at the beginning of this discussion, that education should be differentiated according to the potentialities of the children to be educated, and that one of the greatest needs to-day is the revision and the extension of the present secondary-school curriculum to meet the varied needs of students.

The same five objectives of education, based on the fundamental desires and instincts common to all, will apply to the training of the limited student as well as to the training of the average or superior student. This does not mean, however, that all pupils will be given the same kind or the same quantity of training, for, when they enter the field of labor, those of large ability may, in time, direct enterprises, while others of limited capacity may only faithfully carry out the routine work of a process job.

Henry Adams wisely said, "Work is the badge of Citizenship in a democracy." However, we must remember that work and

unremitting toil are not the same. At the highest occupational level, work means more than taking care of one's self—it means a contribution; at the lowest level, it means self-support.

There is no doubt that the secondary-school pupil of less than average intelligence can be trained to fulfil successfully the requirements of the lower occupational levels. In time, it may be that the public school will offer courses of training to fit boys and girls to enter into process and semi-skilled work just as at present it offers training preparatory for the professional schools and training for expert stenographic and secretarial work and skilled trades.

It would appear that there are four main reasons why provision for such training should be considered: (1) Training will help to eliminate the exploitation of the workers at the lower levels. (2) Training will often result in a living wage. (3) Training tends to standardize an occupation and give it prestige. For example, the telephone girl is now considered on the same plane as the clerk and the stenographer. Nursing is another example of an occupation in which training has added dignity to the occupation. (4) Training is often a means of eliminating social hazard. The unskilled worker is usually the first one to be discharged when work is slack.

Undoubtedly, in time, there will be a vast increase in the number of occupations for which training is offered. While there must be appropriate terminal points for different levels of intelligence, there must be facilities for going from one level to another.

As time goes on, secondary-school people will develop a more wholesome attitude toward work as a part of education. As the secondary school meets the problem of training pupils of less than average intelligence for trade and industrial life, it will put less emphasis on full-time school and more on part-time education on a coöperative basis. Many youths should be employed for part-time with two objects in view: (1) what they can do now and (2) what they can be trained to do later. One of the objectives of the continuation school should be to make better and more skillful workmen who can find joy in their work, in their increasing earning power, and in their prospects for promotion. To accomplish this may require claiming for the education of youth many of the facilities of the community instead of limiting opportunities for training to mere classroom procedure.

Even for the limited secondary-school pupil, however, there will necessarily be some supplementary classroom instruction as well as such teaching as will help to make a life as well as a living,

i.e., training for health, for parenthood, for leisure, and for social participation. In training for social participation, one of our objectives should be "to develop those human qualities in the individual child which shall contribute to his joy of living and to his satisfaction in the environment in which he finds himself or which he makes for himself."

An analysis of the case histories of several hundred secondary-school pupils of less than average intelligence suggests the following general principles as bases for the differentiation of subject-matter as well as of the method of teaching in any subject to meet the needs of the limited pupil. In the absence of any better evidence, these principles are tentatively proposed for present use.

1. Since the limited student can acquire only a limited amount of the present type of academic education, it is necessary that academic education be confined to that which will be most worth while in the student's life. For example, the chief objectives to be sought in the academic English class of the limited student are (a) reading for appreciation and (b) self-expression in its simplest form.

2. Short unit courses should be developed with distinct divisions, having definite objectives, so that both teacher and student can see the progress made. For example, the work in English will include simple letter writing, brief oral reports, digests of articles read, and the keeping of individual spelling lists.

3. The subject-matter should be elastic in content so that it can be modified to meet individual needs as well as group needs. In working out the details of a course of study for a particular group of limited students, we must not make the mistake of seeking for the average youth possessing a certain set of imagined qualities. The subject-matter should be varied according to the envioning conditions, interests, and needs of the pupils in a particular school. Furthermore, we must be guided by what we know almost certainly is ahead of certain groups of students rather than by custom and tradition.

4. The subject-matter should be concrete and deal with simple actual life-situations as far as possible. While superior children look for ultimate principles, causal explanations, and final objectives, children of limited mental capacity seldom seek beyond the immediate and the concrete. For example, English teachers have found that dull pupils can appreciate the story of the "Ancient Mariner," while the philosophy of *Il Penseroso* is beyond them. Teachers have also found it wise to substitute for Milton, Muir's

dog story, *Stickeen*, or his *Biography of a Naturalist*. The universal appeal in Gray's *Elegy* usually reaches limited students, as do also the life-situations portrayed in *Captains Courageous*.

5. Daily assignments should be distinctly and plainly set forth and should never be involved. For example, in English composition it is better to require a few short sentences or paragraphs than to assign a three-thousand-word theme based on references which have to be acquired from many sources.

6. It should always be remembered that the mental age of the limited student is less than his chronological age and that in academic assignments it is his mental age that should be given first consideration. Experience in teaching literature shows us that one of the ways in which limited pupils differ from superior pupils is in their inability to project themselves into situations which they themselves have not experienced. The superior child with his quick imagination and ready powers of generalization does this very easily; not so the limited student. As a home economics teacher expressed it, "For the dull pupil one has to make a passageway and drop in the idea—in other words, personally conduct it."

7. Large opportunity should be given for drill work. Contrary to general belief, the slow thinker is not necessarily the accurate thinker. Nor does the child who learns slowly necessarily have a more retentive memory than the bright child.

8. The limited pupil usually cannot reason out general principles or methods of attack but has to learn largely by rule and limitation. A successful teacher of long experience with limited pupils states that these children go at their work with greater enthusiasm and are more likely to finish it when it is carefully laid out for them. If left to themselves to work out a project that is at all difficult, they soon give up in despair because of bewilderment. Hence the course of procedure for the limited pupil should be carefully laid down for him. A better plan is the following: demonstrate the procedure while he observes; allow him to attempt it himself under careful supervision; have him repeat it until by repetition the various parts of the process come to have for him a habitual relation or association. In time, the whole action becomes easy and mechanical; then and not until then has the limited student mastered it. The more technical the subject, the more nearly one has to come to individual instruction.

While the "keynote in the education of an exceptional child of any age is to provide a wealth of stimulations of a suitable

order," the keynote in the education of the limited child is the establishment of efficient habits. Usually the limited child is not capable of constant adjustment to new situations.

While it is highly important that counselors and teachers should recognize the fact that limited pupils do not have the ability to do successfully the work of the standard secondary-school curriculum, it is equally important that they remember that the limited high-school pupil *has some ability*; it is their privilege to coöperate with him in *developing the ability which he has*. If possible, teachers should find at least one worth while thing at which the limited pupil can succeed, train him in this, and let him feel honest success. Too often the only thing the limited pupil gets from the high school is a sense of failure.

To provide differentiated courses for limited students is not sufficient. Wise counseling and careful follow-up are necessary if the purpose of the special opportunities provided for in the curriculum is to be realized.

While it is true of all children that the more thought, time, and money spent on their proper guidance before they reach the age of eighteen, the less cost will result to society later for correction, punishment, and inefficiency, it is particularly true of children of limited mental capacity.

Principles derived from discussions of pupils' mental equipment.²³ The measurement of the mental equipment of high-school pupils requires the use of refined tests which measure not only special intelligence upon which the school puts a premium but also general intelligence such as mechanical and social abilities.

The intelligence quotient is sufficiently consistent to enable one to predict that the superior will remain superior, the average will remain average, and the inferior will remain inferior.

Pupils who elect rigorous courses are in general a more intelligent group, as measured by so-called general intelligence tests, than pupils who do not elect these courses.

There are important innate and also important acquired individual differences.

The relative importance of innate and acquired differences has not yet been scientifically determined.

²³ See also the principles at the end of Chapter VI.

The proper secondary education for individuals with mental differences, whether innate or acquired, is a differentiated one in which each task is adjusted to talent and social need.

The abilities of many pupils are not only misjudged in school, but are even unperceived because of arrested development, poorly-suited courses, stereotyped curricula, or lack of adequate means of estimating ability.

The purpose of educational and mental measurements is to discover innate and acquired ability and to assist in determining the type of stimulus which, for each individual, is the optimum.

Education must recognize and take account of a much greater range of interests and abilities than it has in the past.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. What, according to Henmon, is intelligence? Can it be measured?

2. If, as is frequently asserted, there is a probable error of about five points in the successive intelligence scores of individuals, is Terman's discussion of mental growth and the intelligence quotient radical or modest?

3. What is meant by "diagnosing a pupil's abilities"? Upon what bases can diagnosis be made?

4. Given a pupil with superior ability who attains barely passing grades in your course. How would you begin a diagnosis of his case?

5. Is the classification of pupils upon the basis of the results of intelligence tests likely to be more reliable or less reliable as the groups of children tested are more homogeneous? Why? What is the bearing of your discussion of this point upon the relative values of tests of secondary and of elementary school pupils?

6. What is the meaning of "educational determinism"? How real is the danger which Bagley uncovers in regard to such determinism?

7. Prepare a brief of Kelley's article.

8. Of what significance are the results of intelligence tests?

9. The term individual differences is sometimes employed to de-

note that one pupil can read four times as fast as his slowest classmates. What more fundamental connotation may this term possess?

10. Given a high school girl, both of whose parents are engaged in work which requires them to be away from home ten hours per day. This pupil has to rise at five-thirty every morning to assist her parents and younger brothers and sisters. After school she has to prepare dinner for her family. In what ways would you expect her school work to reflect her home conditions? How far should teachers go in making the school particularly attractive for such a pupil?

11. In high schools with whose conditions you are acquainted what provisions are now made for such pupils as those discussed in the latter readings of this chapter?

12. Prepare a plan which provides a suitable curriculum and classroom teaching for both brilliant and slow pupils.

13. Evaluate the principles at the end of this chapter.

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CHAPTER IX

THE PHYSICAL EQUIPMENT OF SECONDARY SCHOOL PUPILS

How physical equipment has been investigated. The study of the physical equipment of secondary school pupils is in its infancy. Profitable work on this problem has been thwarted by the early tendency to depend for data upon measurements of pupils of many ages at a single time. Instead of such measurements, there should have been successive measurements of the same individuals. This latter type of measurement has been employed by Baldwin for more than a decade. A second hindrance to progress has been the failure of many students of physical equipment to examine as objectively as possible the mental equipment of pupils. Failure to include a mental examination has been conducive to the drawing of certain conclusions which now appear to be untenable. Baldwin, Gates, Freeman and Carter, and Engelhardt investigated both the physical and mental equipment of their subjects. A third hindrance to progress has been the failure to correlate medical, mental, and physical examinations.

The obvious difficulty of obtaining a large number of representative subjects who can or will submit themselves to measurement for a period of years, and the difficulty of interpreting the measurements after they have been taken have prevented the rapid development of a body of usable facts concerning physical equipment. Already, however, certain products of Baldwin's years of research are available. As his research is still in progress, it is necessary not only to become acquainted with his findings to date but also to keep abreast of his reports as they appear from time to time. The first of the readings which follow reveals many of the difficulties encountered in obtaining physical measurements. It also displays certain types of data which are required for

progress in the study of physical equipment. The possible forms of applications of these data to pedagogical problems as indicated at the close of this passage are given and should be regarded as tentative inferences. The second quotation from Baldwin treats of an investigation of both physical and mental equipments. That Baldwin's findings are somewhat unlike those of other investigators may properly be taken as indicative of the need for further investigation before final conclusions can be formulated.

The abridgment of Murdoch and Sullivan's article also contains valuable data upon the relation between the mental and physical equipment of pupils. As the authors state in the original article, this report is a by-product of a more extensive survey of the Punahou school.

One of the ingenious methods employed in physical measurement is that of finding out the extent of ossification of the carpals and wrist bones. This method has been used by Baldwin, Freeman and Carter, Gates, and others. While Baldwin found a very high correlation, .83, and Freeman and Carter obtained correlations of .73 for boys and .75 for girls, between ossification and mental age (not intelligence quotient), Freeman and Carter found a partial correlation of only .08.¹ That is, when all other elements are excluded, the correlation is greatly affected. Inasmuch as classroom work is mainly mental, Freeman and Carter conclude, therefore, that the promotion and classification of pupils "should be based primarily on measures of intellectual growth and capacity, and only secondarily, if at all, upon the measures of physical growth and capacity." The findings of Gates are presented in one of the readings which follow. It is urged that readers of these discussions decide only to remain open-minded with regard to the controversial issues involved in the passages. Despite such a negative attitude toward certain issues, the promise of these researches is, as Gates asserts, too important to overlook.

¹ See reference at end of this chapter.

A very different manner of studying physical equipment is described in the later passages of this chapter—that which deals with a health program and those by Williams and Hummer and by Walter. While the earlier passages deal with bodily dimensions, these passages deal with the improvement of physical conditions and with athletic performances.

A difficulty with sole dependence upon bodily dimensions and development as a measure of the actual equipment of a pupil is that there is often a great disparity between size-development equipment and functional efficiency. As Sargent states, "While it is true that other things being equal, the strength and functional capacity of a part increases with the size of the part, the number of cases where other things are not equal is so numerous, that the generalization should be greatly modified."^{1a} After establishing the validity of a test as a measure of unspecialized physical efficiency, Engelhardt applied the test to 200 junior high school boys and 36 university men.² The results of this test were then compared with the results of general intelligence tests, educational tests, and school marks. Engelhardt found "no evidence of any significant correlation between mental and physical efficiency." Investigations with results such as these, like the measurement data of Gates and Freeman and Carter, lead one to hesitate before giving great weight to physical data in promotional plans, except as secondary to mental capacity and achievement. That is, when pupils are performing physical activities, they should be, so far as possible, classified according to their physical equipment, but when they are performing mental activities they should, so far as possible, be classified according to their mental equipment. As previously stated, however, one should maintain only a tentative judgment regarding this matter, because the great mass of material which Baldwin has collected by measure-

^{1a} Sargent, D. A. *The Physical Test of a Man. School and Society*, XIII, 128-134, 1921.

² Engelhardt, J. L. A Test of Physical Efficiency. *The Journal of Educational Psychology*, XV, 573-578. December, 1924.

ments of a large and representative number of children may warrant conclusions which are contradictory to those based upon the measurement of a few selected children.

The passages contained in this chapter show ways of measuring and raising the standards of physical equipment and suggest practical uses which can be made of certain acts in furthering the development of certain physical abilities. It may be suggested that, after this type of investigation and Baldwin's type have been conducted for a reasonably long period, there will be an invaluable body of knowledge, a portion of which will indicate the static equipment of youth while the other will indicate the dynamic equipment. When the results of these two lines of development are combined with the results of a thorough-going health program, and not till then we can formulate reliable interpretations of physical data and can hope for definite principles for planning for the physical aspects of pupils during their schooldays and later life.

PHYSIOLOGICAL AGE³

BY BIRD T. BALDWIN

1. *The age distribution of pubescence of boys and physiological maturation of girls.* Two closely related ages which characterize a child's development quite as much as its chronological age in years, months and days, but are less understood, less commonly used, and therefore less familiar to parents and teachers, are the anatomical and physiological age. These denote the physical, or anatomical, growth and the accompanying stages of physical maturation of the individual as indicated by growth of bones, eruption of teeth, color of eyes, metabolism, marked functional changes in sex organs, changes of voice and many other phases of physiological development not so apparent to the casual observer.

The subjects of physiological and anatomical ages have been confused in the literature, because neither has been investigated

³ *The Physical Growth of Children from Birth to Maturity.* University of Iowa Studies in Child Welfare, Vol. I, No. 1, 1921. The original discussion contains charts. 167, 188-193 and 194-197.

empirically beyond a limited degree, although both are full of fertile problems of great significance in the study of individual development. The direct applications of the meaning of these ages to physical, mental, pedagogical, social and moral development have been recognized to a very limited extent.

There is a wide range to be found in the physiological differences between boys and girls of the same chronological age, as will be demonstrated by the data following. Some boys reach pubescence at 11 years of age, others not until 16 years of age; some girls reach this period of maturity at 10 years of age or earlier, others not until 16 or 17. Boys and girls who mature early in these functions may be considered physically older than those of later maturation.

a. Data for boys. In order to determine the wide range of chronological ages that characterize the stages of physiological growth which are entered into at adolescence, the writer and one of his advanced students at Johns Hopkins University, Charles F. Pennington, checked very carefully some material that was gathered under the direction of Dr. William Burdick and Dr. Brown on the ages of pre-pubescence, pubescence, and post-pubescence in boys. In Baltimore 3600 boys of a "motor" type of development, that is, those taking part in athletics, were examined. These data were supplemented by those from a group of 1317 boys from 14 counties of Maryland, making a total of 4917 boys. With these particular children the criterion was that of pubescent growth and pigmentation of fine hair, which characterizes a very brief period of time marking the change from asexual to sexual life, when the ability to procreate is established.

It is found that the pre-pubescent boys range from eight and one-half to 16 years of age in the group of country boys, and from nine and one-half to 17½ for the city boys. The post-pubescent ages range from 11½ to 24 for the country boys and 12½ to 24 for the city boys. For the pubescent stages the country boys range from nine and one-half to 15½, with the mode at 13½, and the city boys from 10 to 18, with the mode at 14. The country boys reach this period earlier than the city boys. At no age are more than 53 per cent of the age group of the city boys pubescent or more than 40 per cent of the country boys.

b. Data for girls. For the girls the criteria were the first menstrual flow, enlargement of the breasts, the appearance of subcutaneous fat, and axillary hair, as noted by the physician

or nurse. Table XXIX shows the age distribution in terms of percent of 47 girls from the University of Iowa Elementary and High School who had their first period of menstruation between the ages of 10 and 17 years; and a similar distribution for 151 Horace Mann school girls, 56 University of Chicago Elementary and High School girls and 134 Baltimore County girls from the Baltimore Athletic League. These data are accurate and represent typical groups of normal girls from the middle and upper class homes.

These data furnish satisfactory criteria for specific purposes,

TABLE XXIX

PERCENTAGE DISTRIBUTION OF PHYSIOLOGICAL MATURATION — GIRLS

1. University of Iowa Elementary and High-School Girls

<i>Ages</i>	<i>Cases</i>	<i>Percent</i>	<i>Median</i>
11	4	8.51	13 years 7 months
12	9	19.14	
13	18	38.29	
14	10	21.27	
15	6	12.76	
	47	99.97	

2. Horace Mann Elementary and High-School Girls

<i>Ages</i>	<i>Cases</i>	<i>Percent</i>	<i>Median</i>
11	7	4.63	13 years 9 months
12	25	16.55	
13	56	37.08	
14	42	27.81	
15	17	11.25	
16	4	2.64	
	151	99.96	

3. University of Chicago Elementary and High-School Girls

<i>Ages</i>	<i>Cases</i>	<i>Percent</i>	<i>Median</i>
11	3	5.35	13 years 9 months
12	9	16.06	
13	22	39.28	
14	14	25.00	
15	6	10.71	
16	2	3.57	
	56	99.97	

4. Baltimore County Girls, Maryland

<i>Ages</i>	<i>Cases</i>	<i>Percent</i>	<i>Median</i>
10	3	2.23	13 years
11	10	7.46	8 months
12	27	20.14	
13	40	29.84	
14	36	26.85	
15	13	9.70	
16	5	3.72	
	134	99.94	

but other types of criteria are being worked out at the present time by the writer.

c. Conclusions:

- I. These data show that among children who are best developed from a physical point of view there is no fixed age for physiological development as evidenced by the advent of pubescence or first menstruation. Adolescence does not begin at the same chronological age for all normal boys or for all normal girls, physiologically speaking. Children, boys or girls, may be of the same chronological age between $10\frac{1}{2}$ and $16\frac{1}{2}$ and differ in physiological age from one to four or five years and still be normal in physical development. The norm for pubescence is a distribution range, not an average chronological age.
- II. At no age do as many as 40 percent of the groups mature.
- III. There is a range in ages from 10 to 17 years for the age of first menstruation for normal girls.
- IV. The girls from the country and from the smaller city (11,000 population) mature earlier than those from Chicago and New York, the median ages being respectively 13 years eight months, 13 years seven months, 13 years nine months and 13 years nine months. This conclusion substantiates the similar conditions found for boys.

2. Relation of establishment of maturity to height of girls.

a. Data. In order to find the correlation from another angle between physical growth and the date of maturity (first menstruation) of girls, 151 Horace Mann girls and 53 University of Chicago high school girls between 11 and 17 years of age were taken, with the heights recorded at the time of the appearance of this physiological function.

It was found for the Horace Mann School, Columbia, that the seven girls who matured at 11 years of age had an average height of 148.2 cm., with the average or norm for the school at 140.39 cm.; the 25 girls who matured at 12 years of age had an average height of 152.1 cm., with the average or norm for the school at 146.22 cm.; the 56 girls maturing at 13 years of age had an average height of 155.3 cm. and the norm was 152.74 cm.; the 42 girls maturing at 14 years of age had an average height of 159.6 cm. and the norm was 156.97 cm.; the 17 girls maturing at 15 years of age were 158.5 cm. in height and the norm was 159.35 cm.; and the four girls maturing at 16 or a comparatively late age were 163.2 cm., while the average for the group was 161.59 cm.

It was found that in working with the data for the 53 girls from the University of Chicago, those who matured at 11 years of age had an average height of 146.9 cm., while the average or norm was 141. The nine who matured at 12 years of age had an average height of 151.4 cm., with the average or norm for the school of 146 cm. The 22 girls who matured at 13 years of age had an average height of 154.7 and the norm was 153 cm. The 14 girls maturing at 14 years of age had an average height of 158.7 cm. and the norm was 157 cm. The six girls who matured at 15 years of age were 159.6 cm. in height and the norm was 159 cm.; and the two girls maturing at 16 or a comparatively late age were 161 cm., with the average for the group 160 cm.

b. Conclusions:

These results show that girls who mature early are on the average close to the norm or below it. This is contrary to the current belief that early maturation is a sign of poor health.

3. Individual growth curves. a. Data. As soon as the wide range of pubescent development in terms of chronological ages is appreciated, the question arises, what underlying principle governs this period of physiological ripening and causes such differences in the phases of physical maturation. This may be made very clear by the charts taken from a previous investigation,⁴

⁴B. T. Baldwin. A Measuring Scale for Physical Growth and Physiological Age. Fifteenth Yearbook of the National Society for the Study of Education, Part I, 11-23-16. The materials and charts in this article are supplementary to a previous study, Physical Growth and School Progress.

where the individual growth curves are given and the establishment of the period of first menstruation is indicated by heavy black dots. It must be recognized that a limited number of type cases are given, but they are all approximately normal. Since these are individual pictures, their validity is established and their worth of permanent value for future analyses. An application of scientific procedure will find several other conditions, such as heredity, social environment, climate, exercise and nationality as important determining factors. The problem here, as in the other sections of the *Study*, consists in finding the basic facts for further study of the normal child.

In the collected results it may be noted that tall girls as a rule, mature earlier than short ones. This was shown in the writer's original study ⁵ by means of individual growth curves. The individual growth curves in height give some exceptions to this rule, but they demonstrate the law that early maturity means that growth is nearing completion in height as well as sex development.

b. Conclusions:

Tall girls of a fairly homogeneous group, as a general rule mature earlier than short ones.

Score cards are presented for boys and girls 5½-17½ years, giving the Baldwin and the Boas norms for height, weight and lung capacity, with graphs on which the child's development can be plotted for comparison with these norms. A chart with growth curves for height, of eight girls, measured over an extended period is given, showing the time of appearance of menstruation. These curves show that tall girls as a rule mature earlier than shorter ones. A distribution table of pubescent changes in 1241 girls is given. Another chart shows the distribution of pre-pubescent and post-pubescent boys (1317 from the city, 3600 from the country). From this it appears that the pubescent changes occur earlier in country boys.

⁵ B. T. Baldwin. *Physical Growth and School Progress, United States Bureau of Education, Bulletin 1914, No. 14*, Washington: U. S. Bur. of Educ., 1914, No. 10. Pp. 212. This is an extensive series of measurements at yearly and half yearly intervals of 861 boys and 1063 girls in elementary and high schools of Chicago and New York City. The records include consecutive measurements on the same individuals (nude) for periods of three to 12 years, of height, weight and lung capacity, together with the school marks of these same children from grade to grade. The data are carefully analyzed in 34 tables and 39 charts, which show that these children are on the average better developed physically than those measured for the norms of other investigators. The conclusion is drawn that "if pedagogical age is accepted as a fair equivalent in these three different schools, for mental development, the tall heavy boys and girls, with good lung capacity, are older physiologically and further along in their stages toward mental maturity as evidenced by school progress, than the short light boys and girls."

4. *Relation of maturation to growth.* a. *Data.* The relation between the cessation of growth and the advent of sex maturity may be shown by a study of the average annual increments of growth between nine and 18 years of age. For the girls who matured at 11 years the increment of growth increased rapidly from nine to 11 and dropped rapidly almost to the one centimeter point at 14. For those girls who matured at 12 years of age, there was an increase in the average increment until 11, then a slight drop and after 12 a rapid cessation until 15, when it was below the one centimeter increment. For those who matured at 13 there was a slight drop at 10 and an increase until 12, then a drop to less than one centimeter at 16. For those who matured at 14 there was a slight drop until 17, at which age the average is less than one centimeter. For the 15 year old girls there was a relatively high increment until 14 years, when there was a rapid decrease to less than one centimeter at 17. For 16 year old girls the rapid drop also began at 14 years and reached the minimum at 18 years of age.⁶

b. Conclusions:

- I. Early maturity is followed, as a rule, by a rapid cessation of growth in stature. For girls who mature at 11, a rapid decrease in annual increment follows until 14, where there is less than a centimeter of growth. For those who mature at 12 a rapid decrease in increment follows until 15, when there is less than a centimeter of growth.
- II. For girls who mature at 13 or later, the decrease in increment begins in the year previous to maturation, and reaches one centimeter or less three years later.
- III. The decrease in yearly increment is more prolonged for girls who mature late.
- IV. There is a positive correlation between physiological stages of maturation and anatomical age, as evidenced by height, weight, and the development of the area of the carpal bones.

5. *Applications of the concept of physiological age.* Six distinct applications of the concept of physiological age in child development may be cited here:

⁶Data from Horace Mann, University of Chicago and F. W. Parker Schools.

a. To physical training. Physical age has a direct bearing on physical training and directed play. Not only do children naturally play with boys and girls of their same physiological age, but the types of games in which they participate are dependent upon the stage of physiological maturity. It would be justifiable to arrange physical training schedules in schools on the basis of physiological age, giving boys or girls of the same physiological age similar types of exercises. On the average, girls are older physiologically than boys.

b. To stages of mental maturation. Physiological age is, the writer believes, directly correlated with stages of mental maturation. The physiologically more mature child has different attitudes, different types of emotions, different interests, than the child who is physically younger though of the same chronological age. While a child may be precocious intellectually, and have a high intelligence quotient and pass beyond its chronological age in the development of certain mental traits, other types of traits indicative of mental maturity may be undeveloped.

Another experimental study just completed shows that the mental age of the individual bears a direct relationship to the physiological age as indicated by height and weight. The results show that at each chronological age the physiologically accelerated boys and girls have a higher mental age than those of the average or below the average physiological age. The girls, when classified on this basis, show a higher mental age for a given chronological age than do the boys. Girls are on the average mentally older than boys.

c. To school progress and promotion. Physiological age has a direct bearing on pedagogical age, as many of our schools are beginning to recognize. The larger and physiologically more mature child may be able to do certain types of school work better, although of inferior ability in specific traits which have been greatly emphasized by school curricula. No child should be promoted or demoted without taking into consideration his or her physiological age. Girls may be expected to progress more rapidly than boys.

d. To industrial work. There should be a direct relationship between physiological age and the age at which boys and girls enter industrial work. Child labor legislation should take into consideration the physiological development of the boy or girl as well as his or her chronological age and school standing. Some children are sufficiently mature physically to meet the require-

ments of an age limit of 14 or 16, while others are immature and in a stage of physiological growth where more school training, more physical training and more opportunity for physical development are essential.

e. To social adjustment. That there is a direct relationship between social age and physiological maturity needs only to be mentioned to be evident. Some girls at a given chronological age are sufficiently mature to meet the social conditions which may arise, while others are not. It is apparent that in dealing with children, especially delinquents, between 10 and 18 years of age, there is a tremendous problem involved which rests directly on the physiological age of the individual. Girls face this problem earlier on the average than do boys. In a particular case it may mean a social misfit for life with another child involved, or the individual may be subject to remedial social training and development.

f. To moral and religious awakenings. The commonly observed periods of moral and religious awakening in children, particularly at 12 to 16 years of age, show that there is a close relationship between physiological age and religious development, with girls preceding boys.

THE RELATION BETWEEN MENTAL AND PHYSICAL GROWTH¹

BY BIRD T. BALDWIN

A few years ago, I published a study on Physical Growth and School Progress,² based on individual growth curves of children. The chief value of these curves consisted in the fact that they were the first to follow consecutively the same groups of children for several years in physical growth, school standing, and the relation of the two. Since the first report I have emphasized in various investigations the *individualizing method*. This paper presents additional empirical data on the analysis and significance of physical growth curves, the interpretation of similar data on mental growth curves, and the relation between mental and physical growth.

At present I have data at hand on approximately 2500 individuals for 30 physical traits with consecutive measurements on

¹ *The Journal of Educational Psychology*, XIII, 193-203. April, 1922. Abridged.

² Published by U. S. Bureau of Education, 1914, No. 10, pp. 215.

nude children for periods of from 18 to 24 semi-annual intervals. These boys and girls have had systematic medical inspection, directed play, physical training, and those falling outside a normal growth zone on account of disease history or abnormal growth have been eliminated. If one of these specific physical traits is selected, growth in standing height for example, the curves show a number of individual characteristics and definite basic principles of growth for different types of children.⁹

The relation between physical and mental growth. It is apparent that certain phenomena associated with physical development show themselves in an increase or decrease in the mental age and in the IQ at certain chronological ages. Both superior boys and girls show a rise in the mental age and in the IQ's between the ages of 11 and 12. Average girls also show this adolescent acceleration, although it appears later than in the case of superior girls. The IQ curve and the mental growth curve of the average boys do not show this phenomenon, possibly because they have not reached the age of acceleration.

The general pre-pubertal increase in mental development becomes evident earlier in the case of superior children than in average children and in the case of superior girls about a year earlier than in average girls. These same contrasts exist between average and accelerated boys and girls physiologically classified. In general all of these curves show that in regard to these adolescent phenomena boys and girls are usually a year apart in their general development.

The mean mental age of physiologically accelerated children is higher than for physiologically retarded children when those above the norms in height and weight (the accelerated) are compared with those above the mean mental age for each year.

Growth in height shows in all of our studies a high correlation with physiological age, or stages of physiological maturity, when various criteria of this age are used. On the average, weight correlates with height $+0.809$ for boys and 0.603 for girls at any two subsequent ages from 7 to 17. The inter-correlations of physical traits are consistently higher for boys; the coefficients of variability are also higher for boys.

The coefficient for a group of 49 girls by the method of partial correlation (with age constant) is between weight and height

⁹ B. T. Baldwin.: *The Physical Growth of Children from Birth to Maturity. Iowa Child Welfare Studies*, No. 1, 1921 (1), pp. 412.

+0.57; between height and x-ray +0.52. For height and mental age the coefficient is +0.53. That is, physiologically accelerated girls (and the same holds true of boys) are mentally accelerated. The mental acceleration includes both stages of mental maturity and brightness, since the scale does not differentiate between these two distinct phases of mental growth. As I pointed out in 1914, no scale can accurately measure mental growth which does not take into consideration individual differences in physiological ages for children of the same sex and same chronological age. A thorough-going program for investigating the relation between mental and physical growth would require consecutive mental and physical examinations on a large group of children at regular intervals, with uniform methods and standardized scales for mental and physical maturity and intelligence. This would necessitate a tri-dimensional scale in place of our mental chronological age scales.

EDUCATIONAL SIGNIFICANCE OF PHYSICAL STATUS AND OF PHYSIOLOGICAL, MENTAL, EMOTIONAL, AND SOCIAL MATURITY¹⁰

BY ARTHUR I. GATES, ASSISTED BY GRACE A. TAYLOR, ELOISE BOEKER AND
DOROTHY VAN ALSTYNE

An experiment was designed to test the significance of several representative measures under the actual conditions and in the customary groupings of the Horace Mann School. As subjects were used the pupils of three classes (fifty-seven pupils) at Grade 4 level and, to test a pre-school level, approximately sixty pupils of the kindergarten groups.

The following measurements and estimates were secured:

I. Physical Measurements. (1) Total area of ossification of the wrist bones from X-ray photographs, measurements by means of the Planimeter,¹¹ (2) ratio of area of ossification of wrist bones to total wrist bone area, (3) height, (4) weight, (5) chest girth, (6) lung capacity, (7) strength of forearm, (8) index of nutrition based on Dr. T. H. Wood's tables.

¹⁰ *Teachers College Record*, XXV, 223-239. May, 1924. The original article contains a tabular summary of twenty-seven studies of the relation between physical and mental traits. The following abridgement is from pages 232-238.

¹¹ The planimeter is an instrument which Baldwin has used extensively in his measurements.

II. Physical Health, Vigor, Stamina and Efficiency estimated by several teachers who used a rating scale prepared for the purpose.

III. Emotional Maturity, as indicated by absence of excessive emotionality, maturity of control, evenness and appropriateness, etc., which were described in a rating scale; estimated by several teachers.

IV. Social Maturity, as indicated by responsibility, cooperativeness, respect for law and order and leadership; estimated.

V. Mental Ability and Maturity.

- (1) Stanford-Binet Mental Age.
- (2) Teachers' estimates of mental maturity as indicated by general comprehension, critical responsiveness, responsibility, "common sense" and intellectual curiosity.

VI. Educational Achievement and Maturity.

- (1) For Grade 4, a battery of six tests from the Stanford Achievement tests plus Horace Mann objective tests in language usage and spelling.
- (3) Teachers' estimates of scholastic maturity as indicated by initiative, interest, habits, persistence in school work, fitness for promotion.

The mental tests were given at the beginning of the year, or based on I. Q.'s secured earlier; the physical tests were given early in the year, with the exception of the X-rays of the wrist which were secured near mid-year; the estimates were secured at the end of the year and were based on observations of at least a year; the educational tests were given at the end of the year.

Since the existence of sex differences, at least in physical traits, has been demonstrated, for purposes of comparison and correlation, both groups—the kindergarten and Grade 4—were divided into the two sexes for each of which results were computed separately. Between each pair of variables, therefore, four correlations were obtained. Although the range of life ages was not great (the average deviations being about 0.65 years for the kindergarten and 0.57 for Grade 4) the effect on the correlations was appreciable and was therefore eliminated by partial correlation.

Details will not be presented in this paper, but will be published in full elsewhere.¹² Only those conclusions which appear well substantiated by the evidence will be presented and these in summary.

Our data force us to an apparent disagreement with Baldwin, Rotch, Woodrow, and others concerning the *general* significance, the predictive value, of physical traits. These writers have suggested that certain traits, notably the X-rays of the wrist bones, are indicative of general anatomical, physiological or physical maturity, or of "physical fitness" or of "maturity" in general. Thus, Baldwin recently has written that "there is a high correlation of the development of carpal bones . . . with growth in stature and with other criteria of maturity."¹³

Our objections are, first, that the correlations among physical measures while always positive and often high are also often low. No single measure is an adequate index of the status in all others. The area of ossification of the wrist bones, for example, while correlating about 0.60 with height and weight, yields lower coefficients, 0.43, 0.31, 0.26 and 0.25, respectively, with chest girth, lung capacity, strength of grip, and an index of nutrition. To secure a measure of general physical status it is necessary to combine several physical measurements.

Second, no single physical measure yields a high correlation with the estimates of physical vigor, stamina, maturity and fitness made by several teachers after a school year of observation of their pupils. The ossification of the carpal bones, for example, yields an average correlation of 0.15 with these estimates; the highest correlation, 0.37, is given by nutrition. When all seven different physical measures are combined by the technique of multiple correlation, the correlation with physical fitness is 0.61. Specialization in the development of physical features is thus indicated again; no single touchstone of physical fitness appears. It may be objected, of course, that the teachers' judgments are inadequate. The fact that the correlations run up steadily as more measures of physical traits are added to the team is some evidence to the contrary, and other evidence will be

¹² Under the title, "The Nature and Educational Significance of Physical Status and of Mental, Physiological, Social and Emotional Maturity." *The Journal of Educational Psychology*, XV, 329-358. September, 1924.

¹³ Baldwin, B. T., in *Twenty-third Yearbook of the National Society for Study of Education*, Part I, p. 39.

observed later, particularly the fact that the correlation of the teachers' estimate of physical fitness adds to the correlation with educational achievement, over and above the influence of M. A., not only more than any single physical trait but more than all of them combined.

Third, no physical trait is an adequate index—as other writers imply—of such types of maturity as mental, scholastic, social, emotional, or “general” maturity. For example, the X-ray of the carpal bones correlates from .07 to 0.24 with the several ratings. No other single physical trait varies much from the average correlations for all physical measures, which are as follows: with mental age, 0.09; with estimated mental maturity, 0.11; with social maturity, 0.14; with educational maturity, 0.13; with emotional maturity, 0.14; with the sum of all maturity ratings (i.e., “general maturity”), 0.16. Clearly there has been a great over-estimation by many of the general significance of these physical measurements. With no measure of maturity does a single physical trait give a correlation practically serviceable for individual prediction. Furthermore, when all of the physical measures here used are teamed together by multiple correlation, the resulting coefficients are in no case high except with estimated physical fitness. All physical traits combined with weightings to yield the highest possible correlation, yield with mental age 0.21, and with social maturity 0.37, which was the highest obtained.

Fourth, maturities, as we have appraised them, are not everywhere one and the same. Growth is specialized and has many phases. In so far as physical status, mental age, educational age, and estimated mental, physical, social, scholastic and emotional maturities, as here secured, represent phases or types of growth, the conclusion apparent is that growth is not everywhere uniform and single but varied and, in different degrees, independent. In our groups there is little association between mental and physical growth, or between social or emotional maturity and educational age. Among some of the estimated maturities, the correlations are relatively high, due in part to the familiar tendency of human judges to fall into errors (the “halo” influence) which produces correlations that are spuriously high. When reasonable allowances for these influences are made, the disparity among the various maturities or growths which appear to exist in nature is strongly suggested.

Classification, then, in terms of maturity offers this difficulty: The several varieties, while intercorrelated variously, are never-

theless far from identical. Arrange the group according to one and there is left a wide range in others.

The problem of classifying pupils can scarcely be adequately discussed until the objectives have been determined. It is the object to group together those that are alike in mental age, mental maturity, physical development, social, scholastic, or emotional maturity or what? Since students of the subject will disagree on these matters, it will be advisable to take up the problem from definite but different points of view, attempting to ascertain what measures or estimates will best enable us to gather together those most alike in some respect. First, let us consider the problem from the point of view of predicting educational achievement on the assumption that our purpose, for the moment, is to get together pupils whose prospects of advancement in these respects are similar.

The problem of classification of pupils, once mainly solved on the basis of demonstrated or estimated achievement, is now more difficult inasmuch as *expectation* of progress is the more prominent consideration. It is now considered not enough to group together children who are scholastically alike at the moment; those should be put together who will advance similarly. It is necessary, therefore, that means of predicting probable achievement be secured. The degree to which the several variables will enable us to increase the accuracy of our prediction of achievement becomes the matter of prime import.

Of all the tests or estimates used in this study, the Stanford-Binet Mental Age gave the best prediction of achievement. Although all of these tests were given at the beginning of the year, or at the beginning of the preceding year, the final attainments in May were foretold with an accuracy indicated by an uncorrected correlation of .595. Except for the teachers' judgments of mental maturity (made at the end of the other year and doubtless influenced by knowledge of test results), no other variable approaches this prediction. The physical measurements given at the beginning of the year gave correlations as follows: Height .01, weight .07, chest girth .03, lung capacity .00, grip .15, nutrition .15. The measure of ossification of the wrist bones, secured at midyear, gave for total area .02, and percentages of ossification 0.16. All of these correlations are undoubtedly so small as to be of no appreciable value. Achievement is correlated with physical efficiency during the year, estimated at the end, .38; with social maturity .19; with emotional maturity .20.

How great the specific influences of these variables may be is disclosed by the multiple correlations obtained when one or more variables are added to M.A. to give the highest obtainable correlation with achievement as compared to the coefficient which M.A. alone yields. When all of the physical measures are teamed with M.A. the coefficient with achievement is 0.626, an almost insensible rise above the 0.595 given by M.A. alone.

Better than the team of physical measurements is the teachers' estimate of physical fitness, vigor and stamina. Whereas the team of physical measurements increases the coefficient from 0.595, that given by M.A. alone, to 0.626, the addition of estimated physical fitness pushes the coefficient to 0.653. This figure is higher than those produced by adding singly social or emotional maturity and the same as that given by adding the teachers' estimates of mental maturity. When M.A., estimated physical fitness and mental maturity are all combined, the correlation with achievement becomes 0.67. This was the highest multiple correlation secured except those which included the teacher's estimate or educational maturity. Adding educational maturity is, however, barely legitimate since the teachers, knowing fairly well their pupils' accomplishment, may have been more or less influenced by it in their judgments. The result is thus, in a measure, a spurious self-correlation.

It may be urged that even if a measurement of mental ability, slightly qualified by considerations of physical status, and fitness and mental maturity, yields the best available means of prediction, it might still be undesirable. While the physically inferior may, or even do, accomplish essentially as much as those of similar mentality but superior in weight, size and other physical traits, they should not, perhaps in the interest of health or physical growth, be required or allowed to do so. This consideration lies outside the scope of this study; no data are available on it. It is plainly a problem worthy of careful investigation. *A priori* there is a defense for an opposing point of view, namely, that health and growth are both benefited not by idleness or by work on materials below the level of one's powers but by absorption in tasks which are adjusted as closely as may be to one's ability. For this assumption there is, moreover, considerable evidence, both from observations of school children and from observations of adults by physicians and others. We have not as yet been presented with evidence that acceleration on the basis of mental ability alone does any harm to health, happiness, growth or effi-

ciency; nor have we seen any satisfactory evidence that grading mainly on the basis of physiological maturity yields beneficial results in these respects.

Even if it is urged that equality in capacity for scholastic achievement is not the only criterion for classification or promotion of pupils, but that similarity in physiological maturity, in physical strength, athletic abilities, motor abilities, social aptitude, inclinations or maturity, emotional propensities and maturity, and other human traits, is also desirable, it becomes none the less essential that similarity in strictly scholastic possibilities be maintained; this problem can by no maneuvering be brushed aside. The other criteria of classification, however, do merit consideration.

We should consider ways and means of selecting pupils alike in physique, in social, moral, emotional and other traits. Our data, so far as they go, demonstrate this fact: We do not secure groups uniform in the social, emotional, mental or scholastic traits by grouping them on a basis of physical measurements. Whether we would get pupils alike even in motor facility and aptitude, in athletic prowess, was not determined. In general, it was found that these several divisions of traits were far from perfectly correlated. Each must be measured by itself and not estimated from something else. Thus, social maturity is correlated with ossified area, 0.13; with ossified ratio, 0.20; with height, 0.15; with weight, 0.17; with all physical traits combined, 0.37; with M.A., 0.26; with educational achievement, 0.19; and with estimated educational maturity, 0.43; with mental 0.69, emotional 0.66, and physical fitness 0.66. When allowances are made for the constant error (halo effect) of judgments which produces correlations with social maturity, itself estimated, which are too high, it appears probable that no grouping will give a compact distribution in all of these traits.

No one, we trust, will accuse the writers of having said that "physical measurements are of little value, barely worth the trouble." This is not implied. These measurements are highly to be desired for their own sake, for appraising physical growth, regulating diet, exercise, for correcting defects, suggesting susceptibilities, and other uses, but not for the purposes of classifying children intellectually, scholastically, socially or emotionally, at least, as these traits were appraised in the Horace Mann School.

THE RELATION BETWEEN PHYSICAL AND MENTAL EQUIPMENT²⁴

BY KATHERINE MURDOCK AND LOUIS R. SULLIVAN

The subjects. The subjects of this study were the six hundred odd pupils of Punahou School who are of old American, British, German, or Scandinavian descent. By far the greater number of this group are of old American stock, coming originally from New England or the Pacific States. Many are Island-born. The British stock is mainly from New Zealand, Canada, and Australia. As a group, these students constitute a fairly homogeneous race group. Punahou School is located in Honolulu, Hawaii. It consists of an elementary school, a junior and senior academy. All school grades from the first to the twelfth are included. The student body of the school is made up largely of white American children, although there is also a considerable number of Orientals, Hawaiians, part Hawaiians, and Portuguese. Since these last mentioned groups are too small numerically to be considered separately we have excluded them from this study in order to eliminate, as far as possible, the race factor.

In economic and social status, as well as in general intelligence, the students of this school stand about half way between those of the ordinary American public schools and the better private schools. Punahou School is a private school, but because of the overwhelmingly large number of Oriental pupils in the public schools of Honolulu, it serves the purpose of educating a large number of the white children who would ordinarily attend the public school. The parents of these children are trades people, clerical and professional workers, and wealthy plantation owners.

In most schools there is a gradual selection of pupils as advance is made through the grades. Those whose general intelligence is below normal are more likely to be eliminated with each advancing school grade and in all comparisons between mental ability of the children of different school grades this fact should be taken into consideration. At Punahou School, as in most private schools, this factor of elimination is not so prominent as in public schools. One reason is that there are no children (or at

²⁴ Adapted from an article entitled "A Contribution to the Study of Mental and Physical Measurements in Normal Children," in the *American Physical Education Review*, XXVIII, 209-215, 276-280, and 328-330. 1923.

least, very few) even in the lower grades who have mental ability very much below the average. Another reason is that pupils of even inferior ability are likely to continue longer in private than in public schools because of the social position of their parents. The selective factor which eliminates pupils below the average of general intelligence is thus less operative in the series under discussion than in a public school group. But we cannot say that it does not exist. There is also an influx of somewhat highly selected pupils from the public schools at the ninth grade which would probably accentuate somewhat the selection in the high school group.

Method. The measures of general intelligence used here are the intelligence quotients which were found for each pupil. The intelligence quotient is the result obtained by dividing the mental age by the chronological age. Each of these ages was calculated to the nearest month. The mental ages used were obtained from the scores made in standardized group tests of general intelligence. The group tests used were: the Otis Primary Test for grades 1 to 3; the National Intelligence Tests, form 1, scales A and B, for grades 3 to 9; and the Terman Group Test, form A, for grades 9 to 12.

For a final measure of the intelligence quotient of pupils, we used the following: for a pupil whose results were obtained from the National Intelligence Test only, we used the intelligence quotient as originally obtained; for a pupil whose intelligence quotient was based upon the Terman Group Test, we used that quotient plus six; for a pupil whose intelligence quotient was based upon the Otis Primary Test, we used that quotient minus twelve; for a pupil for whom there were two available quotients (pupils of grades three and nine), we used the average of the two quotients, after properly correcting the intelligence quotient obtained from the Terman and Otis tests. For the purposes of this study we feel that this use of our data furnishes sufficiently reliable information as to the relative general intelligence of the pupils. Table XXX contains these intelligence quotients for the total group studied.

The anthropometric characters used in this study were: (a) Stature or body height without shoes recorded to the nearest centimeter. (b) Body weight with ordinary indoor clothing, but without shoes. (c) Average head diameters. The maximum head length and the maximum head width were added together and divided by two. This measurement was used to replace head cir-

TABLE XXX

DISTRIBUTION OF I. Q.'s BY SEXES

CLASS INTERVALS I. Q.	TOTAL	BOYS	GIRLS
160-164.9			
155-159.9	1	1	0
150-154.9	2	2	0
145-149.9	1	1	0
140-144.9	8	4	4
135-139.9	20	13	7
130-134.9	38	18	20
125-129.9	55	25	30
120-124.9	48	24	24
115-119.9	49	21	28
110-114.9	69	26	43
105-109.9	56	19	37
100-104.9	66	40	26
95- 99.9	67	34	33
90- 94.9	57	27	30
85- 89.9	22	10	12
80- 84.9	13	10	3
75- 79.9	15	9	6
70- 74.9	6	4	2
65- 69.9	2	2	0
60- 64.9	2	2	0
55- 59.9	0	0	0
	597	292	305

cumference which is usually employed in such studies. While it would be obviously unfair to use the average of the length and breadth of the head in a comparison of the size of the head in two distinct racial groups, it is not unfair to use this diameter as an index of size of head within a group.

Instead of using absolute stature, weight, and head diameter, the average of each character was found for each sex and age group and the individual's weight, stature, or head diameter was expressed in so many pounds, centimeters, or millimeters above or below the average of his or her own age-sex group. Since the physical measures are expressed in these relative, rather than absolute, terms, there would be no particular purpose served in presenting these distributions.

Our choice of intelligence quotients as mental measures and deviations from the average of the age-sex group in weight, stature, and head diameter as physical measures was made in

order to eliminate the age factor and so to make possible the direct comparison of all of our subjects. The use of the intelligence quotient which is computed to the nearest month practically eliminates growth within the age period in mental measures. In our physical measurements, the year rather than the month, was used as the computing unit. But the freeing of either of the measures of the age factor, as we have done by using the intelligence quotient, has made possible the finding of correlations between mental and physical traits which are not spuriously enlarged. Chance errors due to growth within the year period in physical traits can have resulted only in having slightly reduced the actual correlations.

Results. Our most important results have to do with the correlations which were found between general intelligence and weight, stature, and head diameter. The coefficients of correlation are .16 for weight; .14 for stature; and .22 for head diameter. These coefficients are rather small but still too large to be accounted for by accident since they are from five to seven times as great as their probable errors. The fact that the coefficients are all in the same direction from 0 also indicates that we are in all probability dealing with real correlations. The difference in the degree of correlation between weight and stature is probably not significant, but there is a possibility that the higher value for head diameter is significant.

The significance and reliability of our coefficients were further tested for weight and head diameter by separating our material into two groups. Sex seemed to be the most convenient basis for this separation. (The coefficients or correlation for boys are .16 for weight and .20 for head, and for girls .13 for weight and .27 for head. The coefficients are from three to nine times their probable errors.) The results decidedly emphasize the fact that positive correlations do exist between mental and physical measures. They also strengthen the belief that there is a higher correlation between general intelligence and head size than there is between general intelligence and body weight. No consistent sex differences in the degree of correlation appear.

The degree of correlation may also be expressed by the difference in weight, height, and head diameters of individuals with intelligence above the general average and those whose intelligence is below the average. The group with intelligence quotients below 100, who are, on the average, 27 points lower in general intelligence, are 4.8 pounds lighter, 1.5 centimeters shorter, and their

heads are 2.0 millimeters smaller than the group with intelligence quotients above 100. The corresponding chance differences which we might expect between two groups of the same size and variability would be 1.09 pounds, .50 centimeters and .37 millimeters. The differences found are too great to be attributed to chance. (For weight, height, and head diameter, the correlations with intelligence for pupils above 100 I.Q. are .04, .06, and .11, respectively; for pupils below 100 I.Q., the correlations are .13, .14, and .10. In the case of weight and stature, there is a decided difference between the size of the correlations of those who are above and those who are below the general average in mental ability. For both weight and stature the correlation is about three times as great for those who have intelligence quotients below 100. The difference in both cases for weight and stature is as great as or greater than the sum of the probable errors of the two correlations involved. It seems, therefore, to be a very safe conclusion that the difference found is real and not due to chance. Our results indicate that the correspondence between general intelligence and weight and stature in individuals with general intelligence above the average is almost nil. The correlations with weight and stature respectively are .04 and .06. Were it not that these two correlations substantiate each other by being positive and that in this they agree with our results in general we might even doubt that they are at all significant. This difference in the degree of correlation between different mental groups probably accounts for many apparent discrepancies between the results of various investigators.

The correlation between general intelligence and head measure of the pupils here studied shows no difference between those who are above and those who are below 100. Whether or not this similarity of the correlations is real or is due to chance is impossible to say. We have no check on this, by having a duplicate similar measure such as we might say weight and stature furnish for each other; it is quite within the limits of possibility as suggested by the probable errors of the correlations that the correlations between general intelligence really differ somewhat also. We do not feel warranted in drawing conclusions from any of our results, unless at least two measures point in the same direction.

Our data bring out another important point to be borne in mind in interpreting coefficients of correlation. We saw that for weight and stature the correlation with general intelligence

was greater in those individuals whose mental ability was below the average. Yet an inspection of the data shows that the coefficients of correlation are even greater for the total group. This is due to the fact that in arbitrarily dividing our material at the 100 intelligence quotient point we decreased the variability of the two groups for general intelligence. The result of this has of course been to decrease the size of the coefficient of correlation. This result emphasizes the importance of selection of subjects in such studies as this.

A HEALTH PROGRAM¹⁵

By J. H. McCURDY, CHAIRMAN

The health needs of the high school call for the following health program:

- I. A careful health examination which should include:
 - A. Medical examination
 - B. Mental examination
 - C. Physical examination
- II. A healthful environment in home and school
- III. Instruction in health problems
- IV. Physical activity
 - A. Equipment, minimum requirement
 - B. Amount and kind, minimum requirement
 - C. Kind of exercise
- V. School credit

Health examination. The first step in the health program is to discover how nature has endowed the individual. It must ascertain by examination the physical and mental endowment and the capacity for activity.

A. Medical inspection. The objects of medical inspection have been the detection of infectious diseases, of physical defects in the pupil, and the improvement of the sanitary condition of the schoolroom. The medical inspector should cooperate with the

¹⁵Report of the Committee on the Reorganization of Secondary Education. United States Bureau of Education Bulletin 1917, No. 50, 9-11. Of this report only the portion which deals with a health examination is here quoted in addition to the outline of a health program.

physical instructor in the correction of physical defects and with the regular teacher or the trained psychologist in the diagnosis and treatment of mental defects.

B. Mental examination. The mental examination should seek to ascertain the mental health of the pupil and his nervous and mental constitution. The health of an individual depends in large measure upon a normal central nervous system, and upon his attitude of mind toward his work. The time of entering the junior high school is the most critical time in adolescence. At this time the constitution is particularly liable to nervous difficulties, as most neuroses either develop at this time, or lay their insidious hold then upon the individual, to develop later. Much stress in modern psychology is laid upon the necessity of correlating the program of the pupil with his dominant interest. In the junior high school he is offered a choice of subjects for the first time. The proper adjustment of his program is often closely related to his nervous health, and data for this adjustment should include the results obtained by mental tests.

It is probably unnecessary that critical mental examinations should be given to every pupil. It is, however, necessary to give such an examination to the subnormal and the supernormal child. For the other pupils an examination of their grades in their studies, correlated with their grades in physical education and manual training, will give a very fair index of their nervous and mental health and constitution, and will give data on which to base an all-round program for their high-school courses. In correlating the grades of the pupils special care should be taken to make sure that the marks represent capacity rather than mere attendance and good deportment. Care should be exercised, too, in differentiating between manual training and physical education. Manual training calls for the use of the small muscles of the eye and hand, and, in a slight degree, the big muscles of the arms, legs, and trunk. Manual skill of the small muscles represents, in general, health of the fine neuromuscular mechanisms. In physical education the large muscles of the arms, legs, and trunk should be used vigorously. Good grades in this work should represent fundamental health with organic, neural, and muscular capacity.

In terms of the physical education grades, pupils who are fond of physical activities, excel in them, and are leaders in games and sports as a rule possess good central nervous systems. The extreme type of such pupils, the athletes, need to be curbed in their sport. The athletic scholarship rules are made largely for their

benefit, to repress too great attention to sport and to stimulate scholarship.

On the other hand, the pupil who has little physical skill and no interest in games and sports usually lacks organic vigor. In the extreme type of these pupils is the recluse and the bookworm. It is especially in this class that an unstable nervous system may be expected. If their education is confined to a purely intellectual education, it will be at the expense particularly of the organic centers of the nervous system, related to circulation, respiration, and nutrition.

A well-balanced course for each individual is the ideal. A mental examination, with all the modern methods for the subnormal and the supernormal, and a careful examination of the grades of the average pupil with special reference to his work in physical education and manual training upon entering the high school will aid materially in a wise selection of high-school courses.

C. Physical examination. The physical examination calls for a study of the growth and physique of the pupil and a close correlation of the conditions found with the physical activity prescribed. The examination should include such vital problems as eyesight, hearing, growth in height and weight, bodily strength, lung capacity, cardiac efficiency. All these factors should be correlated with the adolescent maturity of the pupils and their scholarship. They are in themselves indices of mental capacity and maturity. The programs of the schools should recognize and use these findings. Periods of rapid growth in height and weight precede growth in strength and endurance. Vigorous big-muscle exercise should be the rule during this period. Over-exercise should be avoided.

Medical, mental, and physical examinations should be correlated with each other and with the general program of the pupil. Heretofore the examinations have been conducted partly by the medical inspectors, partly by trained psychologists, and partly by the director of physical education, without correlation between them. Splendid work has been done, but thus far no city is known to the committee to have a good working coordination of the various problems relating to the health of the pupils. Various cities have specialized on different phases. Some cities have an administrative plan which will enable them to work out the medical, hygienic, and physical activity aspects of the problem, but apparently have no regular examinations for determining the health of the central nervous system, nor for finding the type

of ability of the pupil. Many cities do not seem to know exactly what they should secure through a medical or physical examination, and do not use the results obtained by either.

STANDARDIZATION OF TRACK ATHLETICS¹⁰

BY JANET WALTER

We know that many efforts are being made, and have been made for some years to work out standards of track and field events to use as measuring rods for individuals, teams, and classes. There are still some who scoff, but those of us who have used standards extensively know that they have a very practical value. If a girl is told to jump as far as she can, her effort and achievement will not be so great as when she knows that at least a five-foot jump is expected of a girl of her age. She will practice throwing the ball to reach the standard required of her and keep on practicing with something in view to conquer. If in establishing aims, then, we have furnished an incentive for more exercises, we have accomplished something dynamic.

There has been much discussion as to the basis of these standards, and as yet there is no widespread solidarity of opinion. I can best put before you my standing on the question by giving a history of what we have done in Philadelphia. At least you can rest assured that it is not some fantastical theory, but something that is in actual practice. Physical education has been a required subject in elementary and high schools under the direction of Mr. Stecher for sixteen years. In the beginning of his work there, he started his corps of supervisors working on standards for track and field events. As I was one of the original group of supervisors, I have had the opportunity of seeing his ideas put into operation.

We took age as the basis: first, because it was the easiest with which to work and could be obtained without any additional effort. These standards were to be used by the grade teachers who were conducting the physical training work and an age basis was possible for practical use in a large system, where a complicated plan would not have been. We still use age because of the largeness of our system and the numbers concerned in keeping records. We have no quarrel with those who can administer an age-weight-

¹⁰ The *American Physical Education Review*, XXVIII, 321-323. 1923. Abridged.

height system, but such a system is impossible in dealing with 260,000 pupils. Furthermore, we believe that we do not go far wrong with such a basis, for if we allow 15 per cent above and below normal weight for any age, we include 90 per cent of the total number of cases in that group.

In a study of the performance (in a dash, jump and throw) of two thousand high school girls, I found that there was little variation in the curve obtained when based upon age alone, from that based upon height alone, and when based upon weight there was a decrease in performance only for girls who were above 120 pounds. The per cent of error involved in using age only as a basis, is compensated for by the amount of work accomplished, which would be impossible if an age-weight-height plan were used.

The mean of the thousands of records obtained in each age was found. Taking a figure slightly above this mean, we formed our "age-aim." This process had to be done for each event, so that when we finished we had quite a comprehensive working scale. The age-aim chart shows what each boy or girl is expected to do in different events according to his or her age. It has been necessary every few years to make changes in our standards so that the ones we are using to-day represent the results of years of experience.

To get this in the hands of the teachers and in use in the schools was a gradual process. But in this we have succeeded so that to-day in every elementary school we have our track and field work conducted along the following lines. Each class from the fourth A grade up is divided at the beginning of each term into four teams: a girls' red team, a girls' white team, a boys' red team, and a boys' white team. Each team elects a captain. During the period for track and field work of the class the captain takes charge of the team. She has a printed "Captain's Sheet" for her team's record. This sheet is ruled so that the team can be listed by age. There are columns for recording height and weight, but these are used only for research purposes. There are four other columns, one for the jump, one for the throw, one for the dash (fifty yards—forty or thirty where fifty is not possible), and one for knee raising (on the boys' sheet the fourth column is for chinning). Each column is sub-divided so that there are five spaces. In the first, is placed the aim; the four remaining spaces are for the recording of achievements. On the back of the sheet is printed the age-aim chart, so that the captain has all her material on one sheet. At intervals during the

month, the captain records each of her team mates' accomplishments in the various events. In the dash the captain records only; the teachers or supervisors take the time. In the other events, however, the captains are trained to judge. To facilitate matters we have our school yards properly marked off for each event, so that distances are easy to judge.

If the performance of a girl equals or betters that on the age-aim chart in a particular event, she passes in that event. At the end of the term, the teacher checks up on a "control sheet," passed or failed in each event, opposite each name. Then, class and school percentages can easily be obtained from these sheets. Class percentages are charted by the supervisors. In this way it can be seen where each class stands in comparison with the other classes. In such a plan, we have not only the pupils competing with the standards or age-aims, but we have competition between the teams, between the boys and girls and between classes.

In the junior and senior high schools the "captain sheets" are somewhat different, having six columns, five for events—jump, throw, dash, apparatus, game—and a sixth for rating. In the apparatus column, so far, rope climbing has been recorded for girls, and in the game column whether or not the student has a playing knowledge of the game—the game played during a given report. The column for rating has been added to record the number of events in which the student has passed. A rating is given, dependent upon the number of activities passed. Passing in five activities is excellent; in four, good; in three, fair; in two, poor; and in one, deficient.

We must, I think, go a step further and give numerical value to accomplishments so that each individual can count his average and get credit for what he does over and above his age-aims.

CLASSIFICATION IN ATHLETICS FOR THE PURPOSE OF INDIVIDUAL SELF-RATING²⁷

BY JESSE FEIRING WILLIAMS AND MYRTLE HUMMER

The interest in educational tests and measurements has spread into many fields. Physical education has begun to seek for new standards of classification, for tests of motor power that are dynamic, and for measures that will determine not only motor ability

²⁷ *Teachers College Record*, XXIII, 240-254. 1922.

but also health, endurance, and vitality. Up to the present time the experiments in this direction have accomplished little of importance. Reilly has devised helpful classification methods, but the work of Richards, Stecher, Brown, Schlafer, and Wilson, and the report of the Committee on Physical Efficiency Tests have been mainly a tabulation of what children of certain ages could do in certain motor acts.

The field of physical education offers interesting opportunities for workers in the field of scientific measurement. It ought to be possible to secure a rating of motor ability based upon certain fundamental motor acts that would result in what might be called a "motor quotient" (M.Q.). Such a determination would be of immense value for directors and teachers of physical education in that part of the program dealing with fundamental motor education.

Although such a determination has not yet been worked out, the present available methods of determining motor skill or ability in definite motor acts seemed to offer an opportunity for improving the quality of the work in physical education as it is conducted in Trenton, N. J., by the Supervisor of Physical Education. This report of a method of classification of boys and girls in athletics for the purpose of individual self-rating seeks to show how the determination of what boys and girls can do in certain motor acts may be used to increase greatly the interest in the activities of physical education.

During the years 1919 and 1920 efforts in the Trenton schools to interest boys and girls in athletics had been directed towards the development of a point system. This system provided a minimum standard which had to be passed. Credit was given for each inch or fifth of second gained over that standard. While this brought some favorable results, they were not entirely satisfactory. It was decided to see what could be done by means of a class division system. In the point system there was a tendency to work hard upon that phase of athletics in which a pupil was unusually good, as standing broad jump, for example, and to neglect his weaker abilities. By the class division system, we hope to provide an incentive, not only to improve the ability in which the pupil excels, but to bring up the weaker abilities as well. All of us like new worlds to conquer, and when the highest class in one event has been reached we want the stimulus of success to cause the boy or girl to put forth an extra effort to bring up the other events.

It is hoped that by this class division system the following aims will be accomplished:

1. To make athletics vital, and so increase the interest of every boy and girl in it.
2. To so grade the events as to furnish an incentive for further effort.
3. To develop class spirit by enabling pupils to score not only for self but for the class as well.
4. To make group competition possible between sexes, classes, and grades.
5. To enable each pupil to grade himself in athletics and physical ability, thus making physical standards compatible with academic standards and mental work.

In order to obtain records with which to work, every boy and girl in the fifth, sixth, seventh, and eighth grades of the Trenton public schools was tested in the following events:

<i>Boys</i>	<i>Girls</i>
Standing Broad Jump	Dash (60 yards)
Pull Up (Chinning)	Standing Broad Jump
Dash (60 yards)	Goal Shooting
Running High Jump	Overhead Far Throw

These events were selected because they involved the use of the fundamental muscles and included the fundamental activities of running, jumping, climbing, and throwing; and because they could be measured readily. It is recognized that the standing broad jump and overhead far throw for girls are not the most desirable events. The methods used have been justified, however, and other events may be substituted.

Forty-three fifth grades, 46 sixth grades, 22 seventh grades, and 20 eighth grades were tested, giving a total of 1612 boys' records and 1773 girls' records. No minimum standards were set. Each pupil did his best and his record was taken as such.

All the records for each grade were then tabulated and three class divisions, A, B, C, were made. . . . For the A class $\frac{4}{15}$ of the total was used; for the B class $\frac{5}{15}$; and for the C class, $\frac{6}{15}$.¹⁸ By this method those making the A class, or excellent,

¹⁸ The selection of $\frac{4}{15}$, $\frac{5}{15}$, and $\frac{6}{15}$ as division units of the total number of pupils was made arbitrarily. Three groups, A, B, and C, were desired. We might have divided the total equally into three parts, but, appreciating

were the smallest group; those making the C class, or average, the largest group; and those making the B class, an even third. Arbitrary values of 25, 15 and 10 were assigned respectively to classes A, B, and C, thus affording an incentive to pass from one class to another because of advanced credit. Twenty-five credits were assigned to the A class, so that any pupil in this class could make 100 for the four events, this being the academic standard used in most schools. In the chinning and goal shooting, arbitrary classes were made because records were so low as to be of little use.

As soon as possible, these class divisions were put into operation, and unless weather conditions prevented, there was daily practice in the scheduled events. Pupils were told that they would be placed in the next higher class just as soon as they could meet the requirements. At intervals of six weeks "try-outs" were given and the percentage of A, B, and C classes was determined. This was a decided spur to increased effort and caused a good-natured rivalry between grades, sexes, and classes.

Final tests were taken in March and June. The March record was used as a stepping-stone to a perfect one in June. From the March records, we developed a self-rating scheme which has been of great value in grading the all-round physical development of the pupils. As mentioned before, values of 25, 15 and 10 were assigned respectively to the classes A, B and C. After the March finals, the sum total of each pupil's credits was made. These were classified and tabulated. The same division units of four-, five-, and six-fifteenths were again used and the following rating system was evolved:

A class pupils must earn at least 70 credits

B class pupils must earn 50 to 70 credits

C class pupils must earn 40 to 50 credits

We restricted the C class by insisting that at least ten credits in each event (representing the lowest class) had to be made before the pupil was entitled to that rank. This seemed necessary because a boy might fail in one event and still make 50%, thus giving a pretense of all-round physical development, when one phase was below par.

the fact that normally a smaller number would be superior and a larger number average or below, we made the A group smaller by $\frac{1}{15}$ and the C group larger by $\frac{1}{15}$, giving $\frac{4}{15}$ for A, $\frac{5}{15}$ for B, and $\frac{6}{15}$ for C.

TABLE XXXI

SELF-RATING CHART FOR BOYS IN GRADES V-VIII

<i>Event</i>	<i>Class A</i> (25 points)	<i>Class B</i> (15 points)	<i>Class C</i> (10 points)
Fifth Grade			
Standing Broad . . .	5' 7" up	5'-5' 7"	3' 6"-5'
Running High . . .	3' 3" up	2' 11"-3' 3"	2' 6"-2' 11"
Chinning . . .	3 up	2	1
Dash . . .	8 ⁴ / ₅ -9 ⁴ / ₅ sec.	9 ⁴ / ₅ -10 ⁴ / ₅ sec.	10 ⁴ / ₅ -12 ¹ / ₅ sec.
Sixth Grade			
Standing Broad . . .	5' 9" up	5' 1"-5' 9"	3' 10"-5' 3"
Running High . . .	3' 6" up	3' 1"-3' 6"	2' 6"-3' 1"
Chinning . . .	3 up	2	1
Dash . . .	8 ³ / ₅ -9 ¹ / ₅ sec.	9 ¹ / ₅ -10 ¹ / ₅ sec.	10 ¹ / ₅ -12 ¹ / ₅ sec.
Seventh Grade			
Standing Broad . . .	6' up	5' 3"-6'	4'-5' 5"
Running High . . .	3' 8" up	3' 5"-3' 8"	2' 10"-3' 5"
Chinning . . .	5 up	2-3-4	1
Dash . . .	7 ² / ₅ -8 ⁴ / ₅ sec.	8 ⁴ / ₅ -9 ² / ₅ sec.	9 ² / ₅ -10 ⁴ / ₅ sec.
Eighth Grade			
Standing Broad . . .	6' 6" up	5' 10"-6' 6"	4' 6"-5' 10"
Running High . . .	3' 11" up	3' 6"-3' 11"	3'-3' 6"
Chinning . . .	6 up	3-4-5	1-2
Dash . . .	7 ² / ₅ -8 ² / ₅ sec.	8 ² / ₅ -9 ¹ / ₅ sec.	9 ¹ / ₅ -10 ¹ / ₅ sec.

TABLE XXXII

SELF-RATING CHART FOR GIRLS IN GRADES V-VIII

<i>Event</i>	<i>Class A</i> (25 points)	<i>Class B</i> (15 points)	<i>Class C</i> (10 points)
Fifth Grade			
Standing Broad . . .	5' up	4' 6"-5'	3' 6"-4' 6"
Far Throw . . .	19' up	15'-19'	12'-15'
Goals . . .	3 up	2	1
Dash . . .	8-9 sec.	9-10 sec.	10-11 ¹ / ₅ sec.
Sixth Grade			
Standing Broad . . .	5' 2" up	4' 7"-5' 2"	3' 6"-4' 7"
Far Throw . . .	20' up	16'-20'	12'-16'
Goals . . .	3 up	2	1
Dash . . .	7-8 ⁴ / ₅ sec.	8 ⁴ / ₅ -9 ⁴ / ₅ sec.	9 ⁴ / ₅ -11 ¹ / ₅ sec.
Seventh Grade			
Standing Broad . . .	5' 2" up	4' 8"-5' 2"	3' 7"-4' 8"
Far Throw . . .	22' up	19'-22'	14'-19'
Goals . . .	3	2	1
Dash . . .	7-8 ¹ / ₅ sec.	8-9 sec.	9-11 sec.

TABLE XXXII (Continued)

<i>Event</i>	<i>Class A</i> (25 points)	<i>Class B</i> (15 points)	<i>Class C</i> (10 points)
Eighth Grade			
Standing Broad	5' 6" up	4' 10"-5' 6"	3' 10"-4' 10"
Far Throw	25' up	21'-25'	15'-21'
Goals	3	2	1
Dash	7-8 $\frac{1}{5}$ sec.	8 $\frac{1}{5}$ -3 $\frac{4}{5}$ sec.	3 $\frac{4}{5}$ -10 $\frac{1}{5}$ sec.

By this self-rating scheme which is here shown in Tables XXXI and XXXII, we were able to compare the physical standard with the mental standard of the pupils. By this means a pupil may rate himself on his performance and determine his standing in each event as well as his total score. The class divisions of the self-rating (standards) also show that arbitrary values are set for chinning and goal shooting. The boys were so weak in the former and the girls in the latter that the tests gave no basis for determination of values.

This rating and classification has brought about interesting results for our boys and girls. It has aroused a keener spirit of competition, both group and individual; it has caused pupils to want to exercise before and after school as well as during school hours; it has given each pupil a definite knowledge of his strong and weak points, and has shown him that he alone can change his status. It has set definite goals toward which to strive and has rewarded effort. It has also set up a desire for all-round physical development, instead of development of one phase of athletics.

Principles derived from discussions of the physical equipment of secondary school pupils. Few generalizations regarding the physical traits of secondary school pupils are supported by repeated tests and experiments.

Secondary school pupils are exceedingly variable in physical and physiological maturation and in certain grades range from preadolescence to postadolescence.

The physiological and mental maturation of secondary school pupils and their "social age" are directly correlated with one another. According to this principle, tall precocious pupils may be advanced rapidly in school, but short precocious pupils should have their programs enriched and should not be accelerated.

Physiological age rather than chronological age should be used as a guide in planning physical training and directed play.

Investigations of the physical equipment of pupils are of slight value save in so far as they contribute to a health program. There is, however, a singular lack of correlation between the physical education programs of schools and their medical inspection. The relation between physical education and health has been measured in few schools, and the effects of such education are still almost unknown.

Bases for the standardization of physical attainments and physiological development are necessary in giving adequate guidance to pupils, in deciding who shall be promoted or demoted, and in organizing, conducting, and motivating physical education.

Physical proficiency can be standardized in terms of age, weight, height, grade, performance, and health, or a combination of these characteristics. Present-day practices emphasize standardization in terms of performance and health in combination with one or more other characteristics.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Since many physical characteristics can be measured more readily than mental characteristics, how can the tardiness of the investigating of physical equipment be explained?

2. Examine the data of this chapter with a view to finding adequate support for Baldwin's "applications of the concept of physiological age."

3. How can the average school take cognizance of the findings of Baldwin?

4. Prepare an account of the points of agreement and disagreement between the investigators of physical traits. (Kelley's discussion of "determinism" in Chapter VIII may serve as a model.)

5. Do you regard physical development as intrinsically worthy of great attention or is such development important only as it supports mental development? Give reasons for your answer.

6. Assuming that such investigations as those reviewed in this chapter will eventually be pursued to their logical ends, what practical results may reasonably be expected to follow them?

7. Evaluate the principles at the end of this chapter.

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CHAPTER X

THE GUIDANCE OF SECONDARY SCHOOL PUPILS

Types of guidance. Secondary school pupils have always received guidance. Such guidance has, however, been conducted sometimes systematically and wisely, sometimes carelessly and even whimsically. Examples of wise guidance will be found in the later readings of this chapter. Examples of unwise guidance are provided by the observations of nearly all students. Unwise guidance is probably administered by certain well-meaning teachers who advise their strongest students to specialize in their own respective departments of knowledge. Occasionally such guidance is probably beneficial, but proficiency in a department is not a guaranty of permanent interest in the endeavors to which a department normally directs its students. Another type of unwise guidance is the negative directing which failing pupils receive: they often receive certain knowledge of their inabilities with no knowledge of their abilities. When thus informed, failing students can do no better than try those departments or activities in which they have not already failed. While such negative guidance may at times be beneficial, one has only to converse with failing pupils to realize the great extent of this negative guidance and to find that such guidance more often than otherwise leads pupils to leave school altogether.

Such misdirection of pupils results from a variety of causes which systematic guidance can eliminate. First, teachers with inadequate training are sometimes entrusted with the guidance of pupils. Except that such teachers may set up desirable reading projects, they are but little better as counselors than the pupils themselves. Second, misdirection may result from the superficial

attractiveness of a certain course or curriculum. Nearly every college class provides examples of persons who have thus been attracted to high-school courses which seem to have yielded little profit. Third, misdirection often results from the examples of former schoolmates who have left school and appear to have obtained easily a large share of the world's wealth and wisdom. Such examples constitute definite guidance away from the school. Fourth, the call of certain occupations whose initial wages are relatively high is sufficient to guide thousands of pupils in an unscholastic direction and toward unsuitable occupations. Such forms of misdirection together with those cited in the readings of this chapter show clearly that the school and community already provide much guidance, but that the guidance is often of a quality far inferior to that which the school may properly be expected to administer. In other words, no school is ever going to initiate pupil-guidance; such guidance has already been initiated. Schools can only change from a negligent attitude toward guidance to an adequate program for guidance; from an attitude which fosters social waste to one which leads to the utilization of human capacities.

There are of course certain dangers of systematic pupil-guidance. The guidance may be too rigidly and unsympathetically given. Again, systematic guidance may be accompanied by a failure to understand pupils' capacities, interests, and powers of initiative. Another danger arises in certain schools from a failure to provide adequate exploratory facilities for pupils; that is, from a failure to show pupils either vicariously or at first-hand the world's possibilities and a failure to provide a variety of courses which may be pursued during the years of the junior high school.

One of the values of systematic guidance is a tentative orientation of pupils. Such orientation leads in turn to a substitution of an academic-career motive or a life-career motive for a passing grade motive. In this way definite pupil-objectives are created. Even though pupils subsequently change their plans for life, such objectives have the immense value of giving strong incentives at

times when many pupils are listlessly aiming at nothing higher than a passing grade.

At the present time pupil-guidance is systematically conducted in many schools. Edgerton and Herr recently canvassed the guidance activities of 143 public school systems.¹ It was found that 74 of these schools attempt to provide all pupils with educational guidance and vocational preparation. The types of guidance activities in these school systems probably constitute the fundamentals of pupil-guidance. These types are as follows:

I. Collecting occupational information and making it available to pupils:

- (1) Through central office surveys, source bulletins, opportunity literature, etc.;
- (2) Through contact with employment problems of junior workers, etc.;
- (3) Through excursions, reports, posters, and charts for showing industrial opportunities, moving pictures, etc.

II. Interviewing and conferring with pupils, parents, and others concerned in order:

- (1) To assist in the selection of courses of study and training programs;
- (2) To assist pupils in the study and choice of vocations;
- (3) To assist, through the services of the placement bureau, those planning to drop out of school;
- (4) To consider failures referred by scholarship committees or others, to determine cause and possible remedy for same;
- (5) To assist pupils desiring change of school subjects or programs;
- (6) To provide groups with (a) talks on occupations in general, and (b) talks for those interested in specific vocations;
- (7) To counsel students desiring working permits for steady employment, for after school work, etc.;

¹ A. H. Edgerton and L. A. Herr. Present Status of Guidance Activities in Public Schools. *National Society for the Study of Education, Twenty-third Yearbook*, Part II, 3-27. 1924.

- (8) To follow up and help adjust graduates and former students, etc.
- III. Contributing to curriculum building and the adjustment of pupils to meet occupational needs and interests.
- IV. Recording results of school performance and measurements:
 - (1) By adapting records (psychological tests, self-analysis, cumulative data) to educational and occupational needs;
 - (2) By keeping records of case studies, etc.
- V. Acquainting the public with educational problems:
 - (1) Through contact with prospective students;
 - (2) Through parent-teacher organizations;
 - (3) Through newspapers, industrial organizations, commercial clubs, etc.²

That guidance has practical value is indicated by Proctor's report of investigations conducted in Palo Alto.³ The forms of guidance which he reports are educational and vocational. Of two groups of nearly identical median I.Q.'s, one was given educational guidance, and the other was not. The success of the two groups can be summarized as follows: of the unguided 30.8 per cent failed in one subject, and 10.3 per cent failed in two or more subjects in the first year of high school; while of the guided group only 18.2 per cent failed in one subject, and no one failed in more than one subject. As Proctor says, such guidance provides an aid which is vastly superior to the "trial and error" methods which now prevail. Just as different school subjects make different demands upon pupils, so different occupations make different demands. It can, therefore, be assumed that pupils with relatively low I.Q.'s should be advised to enter occupations whose apparent demands are only moderately difficult to meet. The superior pupil may of course enter any occupation with apparent promise of success. As a test case, Proctor's subjects, 930 high

² *Op. cit.*, pp. 25-26.

³ W. M. Proctor. *Psychological Tests and Guidance of High School Pupils*. Public School Publishing Company, 1921.

school pupils, were asked to designate their occupational ambitions. It was then discovered that 18 pupils whose I.Q.'s and school marks were below average had decided upon occupations, representative members of which rank, according to army test results, considerably above average.⁴ While it is contrary to a certain type of democratic thinking to close any human activity to any American, it has long been a common American practice to defeat utterly the person who selects too difficult a task for his capacity. Whether the guidance should be given before the candidate prepares for and enters his occupation or after he has met humiliating defeat, depends upon the type of democracy which is adhered to by the persons who judge the matter. Proctor's very temperate comments are to the effect that the pupil-counselor can profitably avail himself of information which, if conservatively employed, will increase the counselor's probability of giving helpful advice.^{4a}

Data of the sort discussed in Chapters VI to IX together with results of Proctor's study indicate clearly that teachers now possess guidance devices which were unknown to their predecessors—devices which render an attitude of indifference toward guidance no longer tenable. Systematic use of certain of these guidance devices is exemplified by the readings of this chapter. It will be found that certain devices can be employed in giving educational and vocational guidance, while others can be utilized in directing or guiding pupils in their social, civic, and cultural activities.

The following readings by Dickson and Alltucker describe the guidance work of the schools of Berkeley and Oakland, while Brewer's discussion of college entrance problems sets forth general principles of guidance towards higher education. Lyman's article outlines the multiple-type guidance program of a Philadelphia junior high school. Finally, certain problems and principles of vocational guidance are treated in Jones's article on the relation

⁴ *Army Mental Tests, Methods, Typical Results, and Practical Applications*. Government Printing Office, 1918. P. 23.

^{4a} Students will find Chapters IV and V of Proctor's book especially helpful and suggestive.

between vocational guidance and education. These readings deal, therefore, with many types of pupil-guidance: educational guidance, personal conduct guidance, remedial academic guidance, civic guidance, cultural guidance, and vocational guidance.

SCHOOL COUNSELING AND THE PROBLEM OF INDIVIDUAL DIFFERENCES⁵

BY VIRGIL E. DICKSON

Changing conceptions of the need for education and the purpose of education are bringing more pupils into the secondary schools. These conceptions have so taken hold of public opinion that our laws in many States force hundreds of children into high school who otherwise would drop out of school altogether. Now in California the law requires every pupil to attend school until he is eighteen years of age, provided he may elect to attend part-time school between the ages of sixteen and eighteen years. Many other States have similar laws. This has brought to our schools many pupils who are not adapted to the work our high schools have formerly offered.

The standard high-school curriculum was built for a select group of pupils, for pupils with a high degree of mental power. In past years the pupils who did not readily adapt themselves to the learning processes required in classroom work were eliminated before they ever reached the high school. Even now less than 50 per cent of the public-school children in America ever reach the high school. But in the future, theoretically at least, all of our pupils will reach the junior high school, and nearly all the senior high school. What problem does this place on our shoulders? These schools are supported by public taxation because our public conception is that every child has a right to an education until he is sixteen or eighteen years old—an education that will best fit him for his duties as a citizen. The duties of citizenship vary as widely as the capacities, interests, and destinies of the people who compose a nation.

One argument behind the junior high school movement, which is growing rapidly in most States of the Union, is that the life interests, and aptitudes of pupils begin to show wide variations at

⁵ *Addresses and Proceedings of the National Education Association*, LXI, 864-868. 1923.

about the age of twelve, and that we should, therefore, give some opportunity for election of different courses suited to the differing interests and ambitions beginning in the seventh grade. I might say, parenthetically, that my own opinion is that these differences are almost, if not quite, as apparent in the first grade as in the seventh, but this is not the time or the place for that discussion.

The fact is that our junior high schools offer a certain amount of election of courses and this election gradually increases as we go up through high school and college and university. How shall this election be made? Can we expect pupils of adolescent age to choose wisely in a labyrinth of electives? Mingle if you will among boys and girls in any large high school where specific guidance is not given in classification and on enrolment day listen to the remarks of boys and girls about choosing courses. "Don't take that course, it's too hard." "This course is a snap." "Old Jones is a fright! Don't take anything with him." "Come on, take this course with me." Many times choices are made not on the pupil's real interest or fitness for the course, but on the reputation of the course for difficulty, the reputation of the teacher, personal chumship with another pupil, or some other equally unsatisfactory reason.

Even a casual observation should convince anyone that a careful program of counseling should be planned so that every pupil may have expert and conscientious advice in his educational life.

In the schools of Oakland and Berkeley we have chosen what we call "school counselors" to lead in this important work. We find some objection to the term "vocational counselor" because it signifies to many people something which I believe we are not able to do. To counsel immature boys and girls to fit themselves for this particular "vocation" or that seems to me to be fraught with danger. I know no counselors on whose shoulders I am willing to place such responsibility for classes of high-school or junior high-school boys and girls.

I admit that you may come back with the rejoinder that behind any true school counseling must be the vocational objective. The duty of the counselor is to guide each child into the best possible use of the time he has to spend in school. This of course involves the most thoughtful analysis of the possibilities and probabilities of both the school life and after school life of the pupil. Since a rose by some other name may be just as sweet, we may call this "vocational counseling" or "school counseling" as each neighborhood prefers. I merely give this discussion to explain what we

mean by counseling and to show why we use the term "school counselor."

Few pupils in early adolescence absolutely know or even think they know what vocation they intend to follow in life. Specific vocational counseling is therefore apt to be wide of the mark. There are, however, numbers of things in the school lives of high-school boys and girls upon which counsel and advice are sorely needed. Explanations of courses, their purposes, and requirements, words of encouragement or caution from an adult with broad experiences and training, expert analysis of probabilities of success or failure of a pupil based upon his past record, his interests, his habits and his apparent ability, advice as to various school, home, or social activities—these are illustrative of the fields in which pupils need help that can be given by a properly chosen counselor.

Some will argue that such duties rest upon every teacher. I quickly agree. But I have found by study that gross maladjustments which a trained counselor will quickly discover in numbers in almost any large high school have escaped the notice of a corps of well-trained teachers. The average high-school teacher is a specialist in his field and it is not reasonable to expect him to keep himself also familiar with the diverse activities of the school and community in such a manner as to enable him to be a good counselor to pupils of varying interests and needs as now present themselves to high schools. Theoretically we might wish all our teachers to have such powers, but actually we know they do not, and we are dealing with facts and not theories.

Many high schools have what is called advisory groups, each teacher being responsible for a given number of pupils. Observation will quickly show that many pupils suffer seriously under such a plan. In my opinion, our raw material furnishes altogether too complex a problem for this system.

Every high school needs a person broadminded, scientifically trained, widely experienced, and personally adapted to deal kindly but frankly with boys and girls, men and women. Such a person should head the counseling program—should be responsible for seeing that every boy and girl in every department of the school is studied as fully as time permits, to know if each is living up to what may be reasonably expected of him.

Such a program does not lessen the responsibility of each teacher to know his own pupils and to give them the best of his own expert advice. By experience, we have found that the plan

actually inspires greater interest and greater accuracy in the advisory work of all teachers. The discovery of some gross misfit problem by the school counselor has caused many a teacher to say, "I shall take pains to see that never again shall a misfit condition be found among pupils in my classes, at least unless I am fully aware of the problem and have done my best to rectify it."

What I wish to make clear is that the plan of school counseling as we have it in operation in our schools does not, as some have thought it would, cause high-school teachers to relax their efforts to know and counsel their pupils, but on the contrary inspires them to greater efforts and greater accuracy in such matters.

I am discussing this question today not as a theoretical problem but from the basis of experience. For five years we have been developing such a counseling program in the Oakland and Berkeley public schools. Our scheme involves a counselor in every school—elementary, junior high, and high school. At present we have such a counselor either on full time or part time in all except a few of the elementary schools. The need for such work in the elementary grades is almost, if not quite, as imperative as it is in the upper schools, but that is outside the realm of discussion with you today.

One outstanding feature of our counselors is the programming of all pupils who are being promoted from a lower to an upper school. For example, our schools just closed a few days ago, but during the last four months approximately 3000 pupils contemplating promotion into junior high or senior high school have been studying, under the direction of a counselor, what the upper school has to offer. The counselor has had a personal conference (sometimes several conferences) with each pupil and often with his parents. The high-school program of each child has been made out, has been signed by the parent of the child and by the school counselor and is now in the high school which the child will enter this fall ($2\frac{1}{2}$ months hence). These children are classified now and will start a regular program in high school on the first day of the term. But the important thing is that this program is not the result of snap judgment amid the excitement of enrolment day and the confusion incident upon entering a new and strange school. The program is the result of weeks, if not of months, of careful study and conference between the child, his parents, and the school counselor and teachers who know the child best. Needless to say the high-school counselors have their share in helping to shape

this program so that the high school can adjust itself to the needs of the pupils who will come to it.

Just a brief warning I feel is in place here. Counseling does not mean arbitrary dictation. The counselor who demands that a pupil do this or refuses opportunity for reasonable trial when the pupil or pupil and parent sincerely desire a trial is ordinarily making a mistake. Democracy of opportunity demands that each may have his chance to prove himself. If the counselor frankly expresses his opinion—better in writing in cases of disagreement—and then kindly waits for time, light will settle either upon the counselor (we have often seen this happen) or upon the pupil and parent. In either event time has developed greater power for the future and usually the gain is much greater than the loss. Again, counseling too often takes the rôle of working only with failures or with disciplinary and other problem cases. These are the hardest to counsel, and from such we get the minimum results in proportion to time and energy spent. The time for counsel is before the individual gets into trouble. A real counseling program will usually anticipate trouble and prevent it from developing.

On the other hand, the counsel that pays most dividends reaches those pupils who are most capable—those who will gain much from a mere suggestion—often those who are considered satisfactory by all teachers but who are really capable of doing much better. A counselor's chief duty is dealing with "the misfit," but let us remember that "the misfit" is anyone who is not measuring up in a reasonable way to his capacity. Let us not permit counseling to deteriorate into petty dealing with problems of discipline and failure. I do not by this minimize the importance of the discipline and failure. Counseling that is worthy of the name must be preventive and constructive—preventive of waste and constructive of power.

Permit me in closing to say not boastfully but frankly that our counseling program has the hearty cooperation of teachers, principals, supervisors, administrative and executive officers and patrons of the school. It is the result of gradual growth and reaches nowhere except where it is wanted. It represents the cooperative thought and planning of many teachers, principals and administrative officers.

In summary the main points I would leave with you are: (1) The increasing diversity of abilities and interests among our secondary pupils, coupled with an elective program offered by the schools, demands careful counsel and guidance. (2) This school

counseling should be led by a person especially trained and especially qualified for such work. (3) Such a school counseling program has been tried out and the verdict of all concerned is that "it works."

A COUNSELING PLAN FOR BRIDGING THE GAP BETWEEN THE JUNIOR AND SENIOR HIGH SCHOOLS⁶

BY MARGARET M. ALLTUCKER

Although the aim of education has often been defined as "adaptation to environment," the public school has heretofore made little study of the process of adaptation of a given pupil to his school surroundings. Very often, to take a concrete case, there is a great gap between the junior and senior high schools.

In Berkeley, we found that this was due, not to lack of articulation of courses of study between these lower and upper schools, but to lack of information on the part of the senior high school regarding its incoming students. It has been our custom on registration day to have several hundred students who had completed the work of the junior high school register in the senior high school. Faculty advisers took them in groups of thirty and attempted to make up programs for all of them in a half-day.

A few years ago this was done more or less satisfactorily,⁷ for then the senior high school students were a highly selected group of young people, most of whom wanted academic training and were preparing for the university. Today our high-school population is a cosmopolitan group of young people with widely varying abilities, previous accomplishments, aspirations, environing conditions, and needs.

We have found that making up on registration day the programs of these students, who were entire strangers to us, resulted in much confusion and maladjustment. Failure to get work commensurate with individual capacity and needs resulted in discouragement and withdrawal from school for the less capable students. For the student of large ability, it resulted in undeveloped powers, loss of time in meeting university matriculation requirements, narrowed experiences which could have been broadened by a wise choice of electives, and often general aimlessness with regard to vocational objectives.

⁶ *The School Review*, XXXII, 60-66. January, 1924.

The curriculum of the Berkeley senior high school includes 148 subjects of various types and values designed to meet the needs of all. However, experience has shown that the needs of all can be met only by wise selection of school subjects. This requires guidance; and guidance, if it is to be something more than well-intentioned conjecture, must be based on cumulative data resulting from scientific research. In other words, guidance must be given by specially trained people.

The following plan, developed by the Bureau of Research and Guidance, under the directorship of Virgil E. Dickson, assistant superintendent of schools, has proved most satisfactory in meeting the individual needs of pupils.

I. Policy and organization. With a view to assisting principals in the better placement of pupils in their schools, The Bureau of Research and Guidance has adopted the policy of adopting or selecting for each school in Berkeley, a teacher who acts as school counselor. It provides also for a careful follow-up system, including a study of the needs and capacities of each child, so that training may be offered which will bring about as complete an adjustment of the pupil to all the phases of his environment as his native endowments will permit.

Obviously, a good counselor is one who has keen insight into child psychology, who is trained to observe data and records carefully, who has practical teaching experience, who has a knowledge of mental testing and of methods of making and analyzing case histories, and who has a thorough acquaintance with the educational opportunities and the demands of the next higher school, as well as a knowledge of the conflicting situations that are likely to confront a pupil.

II. Counseling for the next higher school. The following is a brief outline of the work of the school counselor as she helps to arrange the programs of the pupils in the senior high school:

1. The counselor studies the cumulative card or data sheet and the case history of every pupil. These include records of the pupil's scholarship for the previous nine years, his accomplishment in educational tests, his attendance, his attitude toward work, his mental capacity, as measured by a general intelligence test, his age, his future plans, and significant social data.

2. A conference is held between the counselors of the junior and senior high schools for a careful study of the problems and opportunities in each school.

3. The pupil's program for the first term in the senior high school is made out. This involves:

a) A careful study by every prospective student and his parents of the Bulletin, "What the Senior High School Has to Offer." This bulletin supplies accurate information concerning the opportunities offered, requirements for high-school graduation, essentials for matriculation in the various colleges, suggestions for educational preparation for various vocations, and significant facts concerning the Berkeley High School with which the incoming student and his parents should be acquainted.

b) Development, with the entire group and with each individual pupil looking forward to entrance into the senior high school, of the question, "Considering my interests, ability, and social and civic outlook for life, what should be my future educational plans?"

c) A conference between the pupil and his parents with reference to the high-school courses as explained in the bulletin. This may be supplemented by a general meeting of the parents of prospective senior high-school pupils with the director of research and guidance and the senior high school counselor. Here opportunity is given for parents to ask questions concerning the new school in which they expect to enrol their children and about which they have every right to know.

d) The pupil's selection of the program in which he is most interested and which he thinks will best fit his needs and capacity.

e) A conference between the counselor and the pupil with reference to the subjects chosen. Here the counselor checks very carefully to see that the student has proper prerequisites for the subjects he has selected, to see that the subjects meet the matriculation requirements of the college in which the student expects later to enrol or that they offer training for the specific vocation which he may have selected, and, finally, to make sure that enough interests are being developed.

f) A revision of the program by the pupil and his parents in the light of any suggestions brought out in conference with the counselor.

g) A second conference between the counselor and the pupil for final decision with regard to the program. The final choice of subjects is recorded on the "Introduction Card," which becomes the child's admission card to the senior high school. The following is a sample:

BERKELEY PUBLIC SCHOOLS
INTRODUCTION CARD TO LOW TENTH GRADE

Name Nabask, Charles School Willard

Age 14-9 Address 2716 Hillegass Ave Phone B. 4679

Recommended Course:

1. L 10 English
2. L 10 Geometry
3. L 10 Latin
4. Low Biology
- Boy's Glee

Miss West

Counselor

Alternative Mixed chorus

Date December 8, 1922

h) The signature of the parent on the back of the introduction card. This indicates the parent's approval of the course chosen.

i) The signature of the junior high school counselor on the introduction card.

The introduction cards are sent to the senior high school several weeks before the close of the term previous to the student's entrance. The senior high school counselor makes a careful tally of each one and in this way determines exactly the number of sections in each subject to provide for the ensuing term.

Each incoming student's case record is carefully studied by the senior high school counselor. Students are placed in different sections in certain subjects, depending on whether they are of limited, average, or superior ability. In the classification of students, seven points are taken into consideration: (1) previous scholastic attainment, (2) teacher's estimate of ability, (3) industry, (4) health, (5) home co-operation, (6) chronological age, and (7) mental capacity as measured by a standardized test of general intelligence.

At the close of the first seven weeks of the new term, when the the first report cards are issued, each individual student's scholarship grades are compared with the quality of his entrance credits. All students who have done as well as or better than they did in the junior high school are called into the counselor's office and are commended.

An individual conference is held with each new student who has

not done as well as he did in the lower school. The student's own statement as to the reason for his failure is always asked for and is recorded on his case record. The counselor also notes any extenuating circumstances that in her judgment are explanatory.

A sample case record is shown on page 389.

After each report period, during the student's first term in the senior high school, the senior high school counselor holds a conference with the principal, the counselor, and the ninth-grade teachers of each junior high school. Here the case record of each problem case is carefully considered. In this way the senior high school learns what, in the estimation of those who have previously known, studied, and worked with him for three years previously, are the factor's making for the pupil's present failure and possibly what measure can best be adopted to prevent future failures.

A large number of failures in any particular subject immediately raises the question, "Why?" Are the failures due to poor teaching in the senior high school, or to poor preparation in the junior high school, or to a lack of co-ordination of the work done in the lower and upper schools?

As far as is administratively possible, the counselor makes the necessary adjustments to meet the difficulties of each individual pupil, such as modifying the student's program of subjects, increasing the time spent in study, or improving the physical conditions.

A review of a large number of cumulative case records is exceedingly helpful to junior high school counselors in showing them how best to counsel students and make out programs in the future, for case studies show clearly that certain students should not have attempted certain courses, either because of inadequate preparation or because of lack of innate ability, health, interest, or time sufficient to insure success.

Since the chief interest of both the junior high school and the senior high school in Berkeley is to discover and meet the individual needs of pupils, a fine spirit of co-operation exists. Discussion is made possible, not concerning generalities, but concerning how best to serve specific boys and girls. A counseling program is also made possible, employing the case method, which means the individualization of educational diagnosis, the classification of pupils into case groups in the light of significant cumulative data which both schools have been able to gather, and a constant follow-up of each pupil.

The plan described in this article has been in operation for two

LOW TEN CASE RECORD

Name Heath, Elizabeth Senior H. S. Advisor Miss Scott
 Age yrs. 15 mos. 0 Junior H. S. Attended Garfield
 G. I. Q. 115 Junior H. S. Teacher's rating in ability* B
 Industry * C + Home co-operation * B
 Health * C

ENTRANCE CREDITS

SUBJECT	CREDIT	GRADE **
<i>English</i>	I	II
<i>French</i>	I	I
<i>Algebra</i>	I	II
<i>History</i>	I	I
<i>General Science</i>	I	I
<i>Clothing I</i>	$\frac{1}{2}$ Total $5\frac{1}{2}$	I

WORK DONE IN SENIOR HIGH SCHOOL

SUBJECT	SCHOLARSHIP GRADES **		
	First-Report Period	Second-Report Period	Term
<i>L 10 English</i>	III+	I-	II+
<i>L 10 French</i>	II+	I-	I-
<i>L 10 Geometry</i>	III+	II+	II
<i>Costume and Design</i>	I	I	I
<i>L 10 History</i>	II-	I-	I-
<i>L 10 Physical Education</i>	I-	II+	II+

Remarks: Absent five days during first-report period on account of illness.
 III+ in Geometry due to wrong attack; attempted to memorize theorems.
 III+ in English due to extreme shyness in oral work.

* Explanation of teacher's rating: B = superior; C+ = slightly above average; C = average.

** Explanation of scholarship grades: I = excellent; II = thoroughly satisfactory; III = passing.

years, and we find it entirely feasible even when it involves in one semester approximately five hundred students entering the low tenth grade of the senior high school from four different junior high schools.

In time, as this policy and organization are perfected, there will be no gap, and hence no bridge, between the junior high school and the senior high school, for the counseling program will have cemented the work of the two schools into one. More than that, it will have made the senior high school truly democratic, in that each pupil will have the opportunity to work at tasks commensurate with his ability. Both teaching and learning will be more purposeful because of the co-operation, based on mutual understanding between pupils, teachers, and parents.

GUIDANCE IN THE HIGH SCHOOL, WITH SPECIAL REFERENCE TO COLLEGE ENTRANCE¹

BY JOHN M. BREWER

In limiting our discussion to the question of guidance for college entrance we must first name several educational principles usually accepted, in order that we may proceed on common ground, or, if that be not possible, at least that we may recognize and take account of our differences.

1. We must not forget the truth that all persons above the physical and mental age of five years can profit by education. The educational work in war times, the tutorial schools of England, labor colleges, and a number of other experiments have proved this beyond possibility of denial. It means of course that a system of universal education for all ages would be possible, that all normal persons could profitably take some work in juvenile or adult classes, and that no person need ever be told that his education is over.

2. Since our modern life is full of complexity, doubt, difficulty, and disagreement, all persons should study. We shall find persons whose education cannot go very deep; nevertheless it can at least become broader and broader, on a lower level, no doubt, than the education of those with great educational gifts.

3. We must recognize that in a world in which every person had habits of study without doubt a far greater number of persons than now would be studying the classics, history, philosophy,

¹ *The School Review*, XXIX, 434-443. June, 1921.

languages, and literature. Even if a greater number of individuals were studying subjects related to their work, this study itself would lead toward the humanities. Adult education wherever tried has tended to prove this truth. It is about time we removed the *versus* from the ridiculous expression "liberal *versus* vocational education."

4. A worthy kind of vocational guidance must favor delay in the final choice of one's calling for as long a period of educational experience as seems possible in view of individual requirements and opportunity. By the same logic the narrowing of one's education to strictly vocational courses must itself be delayed as long as can be called safe. Thus, the high-school boy who claims to have decided that he is to be an architect should be encouraged to hold this decision as a tentative one, and should be persuaded in any case to continue his broad education as long as he can.

5. In view of these considerations it appears that our present high schools are not completely meeting the need for universal education, and that we must recognize the necessity of caring for the equal or greater number of children of the same age now at work by means of co-operative or part-time systems, continuation schools, extension courses, or other organizations, whether parallel to the present high schools or incorporated within their administration. It should be said in passing that neither evening schools nor correspondence courses are adapted to juvenile requirements, since they can only function in the field of adult education. By the same reason as that which we have just used in appraising our high schools, the present offering of American colleges touches but one little corner of the possibilities involved in adult education. The American college is adapted to the 5 or 10 per cent of our population whose intelligence level is highest. Parallel with it, if not in many cases incorporated with it, at least through extension courses, must go a very much wider opportunity for education continued throughout life. The university extension courses conducted by state universities for inmates of state penitentiaries give us a hint as to future possibilities. In considering the question of guidance for admission to college, we must not forget the smallness of the size of the problem with which we are dealing.

6. By the word guidance we mean enlightenment and advice leading to self-direction. Guidance relates to intellectual life, culture, future vocation, citizenship, moral problems, recreation, social behavior, co-operative activity, and the like.

7. Educational guidance comprises all of the foregoing forms of

guidance; it leads, whenever it is effective, into advice regarding various phases of the individual's personal and social life. For example, most decisions regarding college entrance, choice of curriculum, and choice of studies, run into the question of vocational guidance. Vocational possibilities are accepted or rejected through the particular educational decisions made.

Should the high school be a selective agency? Undoubtedly our colleges are and, under their present organization must necessarily be, selective agencies. The high school, too, as at present organized, obviously must reject those children so retarded mentally that they have not been able to make progress in the ordinary studies of the elementary school.

Even if our typical high school, however, be equipped to give broad or deep education to 99 per cent of our children of appropriate age, there are at present three opinions on the question whether or not the school should try to accomplish this end. First, there are those among us who wish to see Greek and blacksmithing, Latin and vocational agriculture under the same roof and the same school organization, with children of all kinds mingling, at least in some of the studies and activities of the school. Second, there are those who wish to separate children rather early for vocational training—to take those who have decided to be dressmakers into a trade school under a different organization from a school for those who continue general education. Third, another group wishes to skim off the intellectual cream—to segregate the brighter children in the classical or "liberal" high schools and thereby protect them against intellectual contamination.

It will be clear that we shall have to examine some of these questions before we can decide on educational guidance in the high school, and that our problem will never be solved simply by putting a well-equipped educational counselor into the unchanged school machinery.

If 98 or 99 per cent of all our population between the ages of fourteen and eighteen were in our high schools full time, or connected with them for part-time work, what condition of affairs would we have so far as vocational guidance is concerned? Three groups might be easily distinguished: first, those who have not yet decided upon any vocational choice; second, those who have decided but wish to continue broad education as a foundation for later vocational work; and third, those who have decided and insist upon vocational training now. This classification is not so easy as it appears, because an investigation of the high-school

students will show how variable and changeable these decisions are. Boys' and girls' decisions change overnight. Their choices are founded in many cases upon the merest whim. They rush into vocational courses on the basis of a second or third preference rather than a first, and they are led into decisions by means of the worst forms of false guidance. No one who has studied the problem of children's choices, unless he is an adherent of intellectual aristocracy and therefore does not believe in universal education, can justify a neglect of educational and vocational guidance. Neither, I think, can one justify the separation of children into different high schools unless he ignores the obvious necessity for better guidance. Many of the champions both of the classics and of vocational guidance have failed to take account of the human factor involved in the choice of courses and the changes of mind which govern American school pupils. Transfers from course to course must be provided for and can best be offered within one school.

Another possible classification is based upon intelligence quotients. Psychological tests are finding increasing use in helping to determine levels of intellectual ability and have already proved their value in the educational guidance of students, both in high school and college. They do not, however—apparently it has never been claimed that they do—justify the separation of children into classic and vocational schools. In each occupation itself there are varying requirements in intellectual ability. The overlapping of intelligence levels is so extensive that there are undoubtedly many mechanical engineers who rank in intellectual ability with the average intelligence of bricklayers, cooks, and laundrymen, while, on the other hand, some teamsters and barbers excel in ability the average of bookkeepers, nurses, and dentists. A study of any occupation will reveal its possibilities for leadership, its social and economic problems, its complex problems of unionism or other organization, while, on the other hand, there is room, in satisfying the world's needs for some architects, teachers, draftsmen, musicians, and photographers of very moderate intellectual attainments. Vocational guidance cannot justify a separation of children into different types of schools in the high-school age on the basis of intelligence levels. A social theory of aristocracy, false notions of leadership, or a laissez-faire philosophy may justify such separation, but not educational or vocational guidance.

On the other hand, we can find positive and affirmative work

for the high school to do in the matter of selection, provided the selection and classification are always understood as tentative and do not mean radical separation of children. For example, the three classes of students above described must be taken note of: those who feel they must have vocational education; those who have decided upon their calling but wish to continue general education; and those whose general education should be continued because they have not yet reached any decision.

The necessity for vocational education in the high school is of course a sociological and economic necessity as well as an educational one, and it extends downward for a small number of children into the junior high school as well. Progress in social imagination may correct this condition. At present, however, some children in the junior high school rebel at the formalism or other worldliness of an all-sitting-still program and demand an activity which to them resembles vocational life outside. Others demand a variety of activities related to manual, agricultural, and home-making arts which the usual school offering in certain junior high schools does not yet provide. Further, many of our state laws allow the children to take up the burden of life at the age of fourteen; in many cases this means that the child's decision alone determines whether or not he shall continue in school. It becomes a choice, therefore, between vocational education or no education, and at present training for juvenile occupations or a juvenile kind of training for adult occupations is the only offering that will hold certain children in school.

An ideal plan would be to continue broad education for every child as long as possible, but to watch over the exigencies of his life so that when he becomes restless or shows signs of failure or threatens to leave school he may be given a combination of general education and vocational try-outs, may later proceed to try-outs combined with vocational training, then to a part-time system, and finally to full-time work, with perhaps a continuation school contact with the high school.

Selection and classification of children in the high school can always be made in such a way as to provide for social contacts among all children of like age. There is a middle ground between coeducation in all studies and complete separation in schools; this middle ground is the mingling of all groups in student activities, recreation, music, English, history, and manual arts, and their separation for purposes of specific training. We can have a comprehensive high school full of effective specialized work, and at the

same time we can provide for social and academic contacts at many points. In life, persons of high attainments are not segregated. They are constantly at work for and with others of lesser gifts, and it is no doubt forced artificiality which separates these groups in school. A recent editorial very well remarked that the greatest problem in American education is the training of brighter children in such a way as to make them effective for service proportionate to their gifts, and at the same time to educate them so that they will not exploit the general population for their own account. The surest way to prepare for misunderstanding and exploitation is to keep the social groups far apart.

Appropriate adjustments in the school program.—We may here consider curriculum changes needed for proper educational guidance. Try-out courses have been spoken of above; the meaning in this connection is that the school shall be an instrument for discovering and testing the ability of the pupils in a number of activities related to life. Undoubtedly algebra will discover and develop mathematical ability, English composition the ability to write, and oral English the ability to speak. Work on the school paper will test interest in journalism; executive ability may be discovered through student activities; love of nature through scout craft and botany; interest in science through courses in that subject. The beginnings of interest in law, banking, agriculture, dressmaking, etc., may be discovered by means of the widening of the school program and the development of student activities. One who has had but one year of high-school experience should know at the end of that year whether or not he has some measure of initiative, persistence, co-operative behavior, and unselfish action. If the high school does not aim to uncover such qualities and to develop them, I cannot imagine by what other aims it may attempt to justify itself.

Again, classes in occupations should be offered, perhaps in the freshman and junior years of the high school. In the freshman year the course should be devoted largely to a study of the work of the high school, with the particular school's catalogue, yearbook, or curriculum announcement as one of its texts. A general survey of the occupational world both as to its general problems and the requirements of specific callings should serve to emphasize the need for continued education. The relation of both education and occupations to good citizenship should be particularly stressed. The work of this class should be civic and social rather than individual in its approach and result. Individual

needs will best be met, in my opinion, by a broad rather than a narrow aim for the course, and this is further justified because of the fact that even one's own vocational decisions must be made in the light of social relationships.

The class in occupations for the junior year might include a study of various colleges, considering their aims, admission requirements, and the quality of citizenship and the professions for which they offer either a foundation or an actual training. Self-discovery and self-guidance must always be the most important result of try-out courses and classes for the study of occupations, and will thus lead to more satisfactory answers in the junior year to the question, Who should go on to college?

The work of the counselor.—On the basis of a school curriculum which discovers and tests all possible qualities of character, interest, and ability, the educational counselor may begin his work. He may use tests of general intelligence, but should remember that these tests must be considered in the light of other information. Even for the detection of border-line cases Dr. Fernald names the intelligence tests as only one of his list of ten factors: physical examination, family history, personal and developmental history, history of school progress, examination in school work, practical knowledge, economic efficiency, social history and reactions, moral reactions, and psychological tests. Doubtless our tests will show probabilities rather than absolute prophecy. Indeed, there are indications that the much-misunderstood and difficult-to-define correlation coefficients might well be superseded by probability tables; for example, a recent study indicates that those whose intelligence quotient falls below 90 have only one chance in twenty-five of graduating from an ordinary college preparatory course in high school. Later investigations may reveal how many chances out of a hundred any person has of being graduated from college if his record in the alpha psychological test as given in the army be determined at any point along the scale of possible scores. The implied statement in the Pennsylvania regulations that a system of educational guidance can lead "definitely to the giving of positive advice by the school to certain students that they have the ability to do freshman college work successfully and the giving of advice to other students that they do not have such ability" no doubt must be modified. We can determine this matter with a high degree of certainty for some students, but many others will be found to have an even chance to succeed and they or their parents will have to decide whether

or not they wish to take this chance. It is worth while to reiterate the possibility of modifying and differentiating freshman work, perhaps in junior colleges, so that practically all our population can succeed.

It is the counselor's business to lay before the individual all possible information which might affect his decision. He will save an enormous amount of time if much of this can be given in the class in occupations, as he can then confine his personal advice to the more difficult individual problems. He should have opportunity for home visits and visits to various places where the work of leading occupations is carried on. He should organize a list of persons, preferably ex-teachers, who are experienced in the leading occupations and should secure their co-operation in giving him facts and in helping individual children. He should have adequate clerical help and should have funds at his disposal for collecting a library of occupational literature. He should have at his command machinery for sending out helpful material and suggestions to the other teachers, particularly in giving them suggestions for making their work more vital for purposes of discovering and testing ability. He should have opportunity to visit other schools and colleges and to keep in touch with the progress of guidance elsewhere. He should co-operate with librarians, employment managers, unions, chambers of commerce, newspapers, scout-craft organizations, clubs, recreational organizations, Americanization agencies, and other avenues of social progress. He should not be overwhelmed with the task of finding jobs for children who leave school; this work should be done effectively outside of his own personal effort. He should keep simple and usable records of the successes of children under his care. He should find it possible to give boys and girls advice about miscellaneous working experiences which they have along with school experiences or during summer vacations in order that these contacts with life may be related to future hopes and opportunities. He should continue teaching, preferably with a class in occupations. He should pay particular attention to pupils who are failing, and through the study-coach plan or other special classes he should keep them under school guidance as long as possible. He should take to the principal of the school and the superintendent of schools his findings as to the necessity for better forms of vocational guidance and for part-time work and should co-operate with them to carry into effect such important reorganizations as seem desirable. He should foster student

activities and student participation in school management, knowing as he will that the qualities of character and ability therein developed will oftentimes prove more important in the general success of the future worker and citizen than will some of the usual studies.

Training of the counselor.—The personnel of those concerned with educational and vocational guidance ought to be even higher than our present standard for school principals. The principal directs the work of the teachers who are intelligent enough to check him up if he goes wrong. The counselor, however, dealing with the futures of defenseless children will need a high philosophy of education and life. The study of sociology, economics, educational psychology, and education is essential. Effective work is impossible without whole-hearted interest in children, sound judgment, industry, and tact.

Work to be done.—Is there any danger of over emphasizing guidance for college entrance? I think not, unless one deliberately ignores the proposition of educating and guiding others. The recognition of the existence of a diversity of gifts is in full harmony with a true democracy. It has been well said that nothing is so unequal as the equal treatment of unequals, and no one wants a pseudo-democracy of dull sameness and limitation of opportunity. There is work to be done, however, in bringing about for every child the ideal adopted by the National Vocational Guidance Association at its recent convention, "to make sure that each child obtains the equality of opportunity which it is the duty of the public schools to provide."

THE GUIDANCE PROGRAM OF THE HOLMES JUNIOR HIGH SCHOOL ⁸

BY R. L. LYMAN

In junior high school literature the term "guidance" has come to stand for the principle that lies back of all worth-while teaching of adolescents, namely, the well-rounded development of the individual through the wise direction of his activities. This article undertakes to explain how one experimental junior high school of Philadelphia, the Holmes Junior High School, has been making guidance, thus understood, the keynote of a systematic program which has so commended itself to the authorities that

⁸ *The School Review*, XXXII, 93-104. February, 1924.

eighteen additional junior high schools are planned for that city.

Obviously, it is impossible in a brief article to set forth in detail all of the agencies, devices, and organizations which contribute to guidance in a school of seventeen hundred pupils and fifty-three teachers. Therefore, the present endeavor must limit itself to the four outstanding features of the program—personal guidance, remedial guidance, civic guidance, and cultural guidance.

Lengthened school day.—The faculty of the Holmes Junior High School assumed that a program of student activities involving guidance must supplant the obsolete and barren endeavor to guide pupils by lessons and preachment. With this in mind, approximately one hundred student organizations have been evolved, a few at a time, as the expanding life of the school seemed to demand, all of them functioning in the direction of learning by doing under wise guidance. As the variety of activities grew, it was found necessary to provide for them a regular period in the daily program. This was accomplished very sensibly, according to current educational theory, by adding a seventh period to the school day for guidance. Naturally, opposition was at first apparent on the part of the pupils, and amusing stories are told about the methods by which pupil officers took effective measures to prevent absence from the added period until finally the value of the work firmly established that extra period in the children's minds as an enjoyable climax to the day's work. That the reader may be assured concerning the systematic arrangement of the many interrelated guidance activities, a small portion, about one-fourth, of the weekly schedule for the seventh period is presented in Table XXXIII.

Personal guidance.—Three weeks in the month the seventh period on Wednesday is set aside for teachers' meetings and various other faculty conferences. On these days the pupils are dismissed for the final period. Every teacher uses the last period of the fourth Wednesday for personal help with pupils in her classes who have met special difficulties or who have lost lessons through absence. In addition, every Friday each teacher conducts personal conferences with the pupils of her own home room. Such guidance periods are strictly confidential; no visitors are permitted to attend them; even the principal of the school makes a point of not entering a room during the final hour on Friday.

The personal guidance periods enable every home-room teacher to come into intimate contact with her pupils. Even less than

TABLE XXXIII

ONE-FOURTH OF THE SEVENTH-PERIOD SCHEDULE OF THE HOLMES JUNIOR HIGH SCHOOL

TEACHER	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	Triangle Club	Mathematics restoratory IX B	Professional	Travel Club	Guidance
2	Advertising Club	Advertising Club	Professional	Mathematics opportunity group	Guidance
3	English restoratory VIII A	Junior Dramatic Club	Professional	VIII B-IX A Dramatic Club	Guidance
4	English restoratory IX B-IX A	Scribblers' Club	Professional	Poetry Club	Guidance
5	Art Needle Club	Public Speaking Club	Professional	Costume Club	Guidance
6	English restoratory VIII B	Etiquette Club	Professional	Shakespeare Club	Guidance
7	Civic Club	Current Events	Professional	History restoratory VIII A	Guidance
8	Department of Public Welfare	Exploratory Club	Professional	History restoratory VII B	Guidance
9	German restoratory VIII B-IX A	Latin restoratory VIII B	Professional	French restoratory VII B	Debating Club
10	Botany Club (girls)	Botany Club (boys)	Professional	Science restoratory VII B	Science opportunity group
11	Stamp Club	Science restoratory VIII A	Professional	Bird Club	Guidance
12	Seton Club . . .	Wild Flower Club	Professional	Science restoratory VII A	Guidance
13	Games	Games	Professional	Social Dancing Club	Athletics Leaders Group
14	Tennis Club and Swimming Club	Hiking Club	Professional	Social Dancing Club	Athletics Leaders group

usual the teacher and more the "counselor and friend," she gathers from every member of the faculty information about her own boys and girls concerning lapses in good conduct, the shirking of responsibility, scholastic losses due to illness, burdensome home duties, etc. In the guidance period there are no "lessons." Through friendly, intimate group conversation or personal interviews, new pupils are imbued with the ideals of the school—cooperation, courtesy, the shouldering of responsibility, and the like. Individual failure or success is brought out, and remedies or causes stressed. During the time when affiliations with social clubs are being made or courses are being chosen, the topics of conferences are hobbies, favorite studies, and immediate and deferred values of various occupations. Here, too, are considered various ethical problems associated with the school "code of honor"—sportsmanship, clean speech, truthfulness, etc. Correlation of the guidance period with civic responsibilities brings up such topics as the right attitude toward holding office in the Holmes Junior High School, the duties of leaders and followers, and the sacrifice involved in all coöperative endeavor. In short, the last period on Friday is the time for "direct moral guidance" par excellence and is tied up, as all guidance is, with the daily privileges and duties of the varying school lives of the pupils.

The last periods on Monday, Tuesday, and Thursday are reserved for the remedial groups, the civic organizations, and the enrichment, vocational, and recreational clubs, each teacher acting as sponsor for two and sometimes three of these groups.

Remedial guidance.—Remedial guidance, intimately associated with class work, is the practical agency for accomplishing one of the avowed purposes of the junior high school, namely, meeting the individual scholastic needs of boys and girls. The remedial groups are of three different classifications—the "restoratory," the "preventive," and the "opportunity" groups. All three parallel by grades the four major branches of the curriculum—English, science, mathematics, and languages. For example, remedial provisions for the second-semester children—the VII B pupils are as follows: VII B English restoratory group for conditioned and failed pupils; VII B English preventive group for pupils in danger of conditions; VII B English opportunity groups for pupils who have special lines of interest; and nine other groups of similar distinction, three for science, three for mathematics, and three for language.

The restoratory and preventive groups are designed to guard against discouragement and other evils incident to retardation; they include in their membership, respectively, the pupils who were conditioned or failed in the preceding term and those who are in danger of condition or failure in the current term. Conducted largely as supervised-study classes with the minds of the individual pupils focused on restoration to good standing, the strictly remedial clubs, assisted by other remedial agencies, have reduced retardation more than 50 per cent.

The opportunity groups, correlating closely with the more strictly remedial groups, provide direction for pupils who have special duties to perform. For example, the activities of the opportunity groups in English include the preparation of assembly programs; rehearsals of formal or informal plays; conferences with pupil chairmen, with committees, and with club officers who desire direction in any phase of club activity; the supervision of groups in charge of department bulletin board; and the training of pupils to conduct classes in the absence of regular teachers or to give suitable aid to substitute teachers. In the opportunity period, too, are conferences with pupils whose English habits are poor, special conferences with children who are socially crude in manners or deportment, and interviews with parents who are willing to come when summoned. Through similar activities, opportunity groups in science, history, and mathematics operate along the lines of their departmental needs.

An explanation of the fifty per cent reduction in retardation involves three considerations. First, for the obvious reason that pupils need positive guidance in scholastic deficiencies, membership in the remedial groups is mandatory. The children are directed into remedial work because they need to be there; on the recommendation of any of their teachers, they are placed in the way of avoiding failure or condition. It should be said that this compulsion is about the only manifestation of obligatory attendance found in all of the activities of the school. Although the remedial work is mandatory, it not infrequently happens that a child volunteers to give up one of his optional social clubs because he feels the need of the help that may be found in an appropriate preventive group. The case of one little girl who asked to give up the Social Dancing Club because she felt the need of Spanish preventive work is not untypical. This case is indicative, too, of a condition that a visitor sees throughout the school, although not

published or heralded, namely, that pupils are again and again induced to become their own critics; they pass judgment on their own behavior, their own scholarship, and their own share in the community life, and they discover their own opportunities for better participation in both the curricular and extra-curricular activities of the school.

Second, remedial work reduces retardation because the pupils dislike to lose membership in the social and recreational clubs of their preference. Each child in the Holmes Junior High School is a member of three organizations, and under no circumstances may he be required to be a member of more than two of the strictly remedial groups; he is always privileged to enjoy membership in at least one of the selective recreational clubs. It is necessary for a child to belong to only one restoratory club, he may choose two recreational clubs, perhaps the Art Collector's Club as his first choice and the Spanish Club as his second choice. If he has no conditions and no immediate danger of them and is therefore free from all remedial obligations, he may be a member of the Glee Club as a third choice. This plan works both ways. Children in the remedial clubs are zealous in helping the sponsors find their weaknesses; self-diagnosis is very common; it does not take a careless speller long to discover that the judicious use of the dictionary will meet his needs; a pupil having difficulties with Spanish declensions soon learns that earnest application will relieve him of the necessity of membership in a Spanish preventive group and enable him to return to the recreational club of his choice. The universal testimony of the teachers is that the children in the Holmes Junior High School, heartily disliking conditions, soon learn to anticipate and ward off scholastic disaster, and, if "caught" and sent to preventive groups, they make vigorous effort to return to good standing. It is estimated that only about 5 per cent of the students are at any one time in the remedial groups. During a semester the shifting in and out, which may take place at any time, brings to these groups perhaps 15 per cent of the children. In one sense, the entire seventeen hundred pupils are in the opportunity group; they are all subject to the confidential home-room guidance on Friday.

Third, remedial work tends to prevent retardation because a strong IXA teacher in mathematics, for example, or in French, is assigned as sponsor for the restoratory IXB mathematics group or the IXB French group. In other words, pupils who are lagging

in the second semester of any subject are privileged to do their remedial work under the one teacher who, if she had been their instructor in the first semester, might best have helped them lay a surer foundation.

The faculty has at least one other device for individual work of a remedial nature. One of the strongest teachers in the school is scheduled for restoratory work all day; that is, she does remedial work and nothing else. To her conferences come the most difficult cases—children who fail in spite of the efforts of the more general restoratory agencies.

A word must be said also about remedial work as applied to the physical needs of individuals. A group is organized for children who have defects of speech like stuttering or stammering; another for pupils who are badly nourished or anaemic; and other groups for crippled children. These are samples of a program which cares for boys and girls who, because of physical handicaps, are not privileged to participate in the activities regularly scheduled in the department of physical education in the social clubs like singing, dramatics, and public speaking, or in hiking, tennis, swimming, and social dancing.

Civic guidance.—Guidance in citizenship is accomplished by the organization of the entire student body into what is called the Industrious Civic Union, so named by the pupils when the "school city" was established in 1921. The title is appropriate in view of the wide range of civic activities. Seventeen hundred boys and girls, crowded into a building modern and new but originally planned for an elementary school of twelve hundred pupils, have, under wise leadership, rounded out an ingenious scheme of self-government. Through the regular home-room units, called "chapters" of the Industrious Civic Union, fifty-three in number, the pupils elect their representatives to the civic bodies known as the Council or the Administrative Committee and the Department of Public Works, the Department of Public Safety, the Department of Sanitation, and the Department of Social Welfare. During the home-room elections, as in all of the life of the school, two principles are of current emphasis: first, the significance of responsibility in choosing capable delegates to the governing bodies; second, the readiness of every individual, whether an elected officer or not, to give himself unreservedly to the public weal.

The administrative Committee meets once a month to hear

the reports from the various bureaus into which each department is subdivided and to offer constructive suggestions.

The Department of Public Works, responsible for the care of all property, functions through the Bureau of School Property, the Bureau of Neighborhood Property, and the Bureau of Personal Property. These bureaus, which are late developments, came into being when the pupils found that public sentiment needed to be created in their community for the preservation of three kinds of property and that a corps of vigilant officers with duties properly distributed ought to see that the rank and file of citizens respect such property. From the standpoint of guidance for citizenship, the actual care of property is of minor importance. The significant fact is that seventeen hundred boys and girls at the proper time and places are being taught habits altogether too much neglected by adults.

The Repair Club, which actively coöperates with the Department of Public Works, illustrates so well the principle that guides the origin and development of all the organizations throughout the Holmes Junior High School that it may be explained here. As in the case of the recreational clubs, the needs of the community dictate the type of organization attempted. Those activities are considered best which are not forced from above but which rise spontaneously in response to need. The Repair Club, a group of boys under sponsorship of a teacher of manual training, is the result of a suggestion that there were many little jobs like repairing curtains or fixing desks in a big community like theirs which the boys themselves could attend to. The writer saw members of the Repair Club called in to restore a "dark curtain" which fell from its roller during a general assembly period. They climbed on step-ladders, fixed the curtain, and removed the débris while not so much as a single eye of the three hundred children in the room appeared to be turned in their direction. Citizens doing their duty in a normal way attract no attention.

The Department of Public Safety supervises traffic and institutes safety patrols for the protection of the pupils. It has a Bureau of Traffic, which operates both inside and outside of the building, a Bureau of Law and Order, and a Bureau of Fire, which supervises the fire drills. The department prepares fire-drill charts which are reproduced by the Blue Print Club and placed in each classroom, so that the entire school becomes familiar with the scheme.

The Department of Sanitation interests itself in the cleanliness of the school. To facilitate its work, the school is zoned, and bureaus of basement, corridor, classroom, and yard inspection are established. Through the awarding of banners for clean classrooms, rivalry is aroused. In each of these bureaus the "lieutenants" secure volunteer guards to aid in carrying on the work.

The Department of Social Welfare consists of the Bureau of Decoration, the Bureau of Publicity, and the Bureau of Social Welfare. The latter bureau was hard to launch. Its duties are largely in seeing that the various organizations coöperate in welcoming new pupils and in paying suitable attention to pupils who are in social need. For example, the fifty-three home-room representatives of this department are charged with the duty of making careful note of all absentees in their respective rooms. The Blue Print Club makes absentee cards. The Botany Club gives some of the flowers which it gathers so that the Bureau of Social Welfare may send them to every member of the school who is absent through illness. A representative in every class telephones the assignments to the children who have missed them for some good reason.

The Bureau of Social Welfare also takes over the duties of helpers for the teachers. If a substitute is absent and no substitute appears, a lieutenant of the Bureau of Social Welfare in the room automatically assumes control of the class and conducts the lesson. If there is a substitute teacher, it is the duty of the lieutenant to help her in every possible way; in such an emergency he is the society's discipline officer. Another function performed by these officers is taking charge of tardiness. At the front entrance of the building there is a "late room," to which every tardy pupil reports at once. Still other duties of the various branches of the Department of Social Welfare are ushering at parents' meetings, promoting financial enterprises and aiding the principal and the teachers in emergencies. In general, the civic organizations supply the leaders who automatically take charge of their groups when unusual and unexpected situations arise.

It might be inferred that the members of the civic clubs are the only children whose activities are guided toward citizenship. Such is not the case. The fact is that by many skilful devices the influence of every civic group—for that matter, of every club in the school—reaches beyond its own walls. The principle is that every organization shall extend its activities into the life of the school

so far as possible. To reach the rank and file of the school citizenship, each civic organization and many of the social clubs have bulletin boards in conspicuous places, on which are displayed every manner of exhibits dealing with the club's interests. Under friendly rivalry, diligent and persistent care constantly shifts the displays, so that something fresh and interesting is ever available to draw the attention of the passers-by. A second means of extending influence beyond committee walls are the public announcements, made by civic club representatives or by members of the Public Speaking Club, at the four major assemblies which meet in various parts of the building the first fifteen minutes of the day. Especially valuable, the teachers think, are the addresses given by various representative club members in the early assemblies of the year when the new VIIA pupils are introduced to the various civic traditions which are being established in the school. Obviously the civic clubs are constantly in need of helpers, and, when occasion arises, such assistants are publicly announced and their names are posted on the appropriate bulletin board. In other ways which cannot be mentioned here, the ideal is to lead everyone into the civic service of the school.

Cultural guidance.—Membership in the remedial groups is mandatory; membership in the civic organizations is elective; membership in the more strictly social groups is selective; that is, each pupil, with certain reservations for priority rights, enters into the vocational, recreational, and enrichment clubs of his own choice. These clubs, which are designed to cover all sorts of needs and desires of a large student body, number more than fifty. Some, like the Dramatic Club, are cultural, offering opportunity to develop latent tastes. Others, like the Art Collector's Club, are æsthetic and are sponsored by the departments of art and music, and, in the case of æsthetic dancing, by the teachers of physical education. Still others, like the Camp Cookery Club, are of more practical vocational nature and are sponsored by teachers of domestic science and manual arts. Others, like the English, the Spanish, and the French clubs, offer opportunities for extending class work for the more ambitious and capable pupils. Before any new club may be formed, it must pass official tests showing (*a*) that it meets the personal needs of several children, (*b*) that it will add materially to the types of activities already in the school, (*c*) that it embodies some contribution toward training for efficient citizenship, (*d*) that it ministers to community needs, and (*e*)

that it will not arouse political or religious animosity on the part of the parents.

It is apparent that free choice of the cultural clubs has to have certain limitations. For example, of one incoming VIIA group, more than one hundred children expressed preference for the Glee Club. The unwisdom of children's unrestricted choices was indicated by the fact that many of them were overactuated by the word "glee"; they were looking for pure unadulterated fun. Restriction of free selection is secured as follows. Membership in the clubs is limited. The older pupils of Grades IXB and IXA are allowed first, second, and third choices. Then the VIIIB and the VIIIA pupils choose, followed by the VIIB pupils. The incoming group, made up of VIIA pupils, is given no option because of the immaturity of its personnel; instead they meet in mass in the auditorium for one semester in three large clubs adapted to their needs—Monday, story-telling; Tuesday, music appreciation; and Thursday, travel. In addition to the stories, the Victrola demonstrations, and the motion pictures, the sponsors, supplementing the work of the Friday personal-guidance periods, try to introduce pupils to the aims and purposes of the new school. Moreover, upper-class representatives of all of the social clubs are given opportunity to display their work; speakers from civic organizations lay the foundation for true Holmes citizenship, and it is said that the newcomers listen with profound attention to the venerable fourteen-year-old officials of the Industrious Civic Union.

As exemplifying the aims and activities of the purely cultural type, the undertakings of the Music Appreciation Club may be cited as representative. In order to open up to the children the field of music, the club carries on its work in a variety of ways, the chief of which are listed as follows:

Talks by the club sponsor on the evolution of music from ancient times to the present day, accompanied by excerpts from type compositions played on the Victrola.

Consideration of the varying tonal qualities of the voices of both men and women from the point of view of the solo voice, of duets, trios, quartets, and choruses. Pupils are made acquainted with the names of past and present "master singers."

A study of the orchestra as a medium of musical expression—the function of each individual instrument and the color contributed by each to the general ensemble. The various choirs—string,

wind, percussion, and brass—are studied, accenting the types of emotion voiced by each group. The tonal quality of all instruments is illustrated by solo passages, and students are made familiar with the peculiar timbre of each.

A study of national songs and dances as they evince national feeling. Reference is made to the psychologic, climatic, and historic background responsible for the characteristic rhythm and melody of each. Among the dances considered are the jig of Ireland, the hornpipe of England, the highland fling of Scotland, the tarantella of Italy, and the minuet of France.

Dances by the pupils in the national costumes as a visual aid to musical memory. The characteristic instruments of each country are also noted—the castanets of Spain; the bagpipes of Scotland; and the dulcimers of Hungary.

Lessons in rhythm, harmony, and simple musical forms are profusely illustrated on numerous instruments and by many compositions, like the funeral march and the military march. The characteristic rhythms of the waltz, polka, mazurka, minuet, gavotte, bolero, etc., are all made familiar to the pupils.

Memorization contests in which the themes or opening bars of famous compositions are played for recognition and placement by the pupils.

Story hours in which the plots of the operas are told by certain club members and illustrated on various instruments by other club members.

Attendance at children's symphony concerts given by the Philadelphia orchestra.

It must be understood that only glimpses into the life of the Holmes Junior High School have been possible in this article. However, these glimpses of the personal guidance, the remedial guidance, the civic guidance, and the cultural guidance are at least indicative of the principle which helps make a happy and successful school community, namely, meeting the individual needs of children through agencies which stress activity as the chief means of learning.

VOCATIONAL GUIDANCE AND EDUCATION*

BY ARTHUR J. JONES

The vocational guidance movement in this country has had a most interesting development. Like some other educational

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movements, it was not, strictly speaking, an entirely new idea, but was and is merely a new emphasis upon an element long existent in education. In fact guidance may be said to be as old as education itself, but until recently it was not separated out for special consideration. It has resulted from a more careful analysis of the educational process, by which certain elements were selected that were judged to be of sufficient importance to warrant special attention and definite organization. Like other movements, it has passed through several more or less distinct stages. It originated in the minds of certain far-seeing men here and there, who began to realize the need for more careful attention to this phase of education. Among the most notable of early pioneers in this field was Frank Parsons, who, probably more than any other man, first called our attention to the need for specialized study in the field of guidance. Even he but dimly realized its possibilities, nor did he clearly see the movement in all its phases, but he did point the way and inspired many to continue the work.

The next stage was that of propaganda, which was largely given over to "selling the idea," to bringing it before people, to popularizing it. This important phase was, as is usually the case, characterized by general and indefinite statements, by more or less emotional appeals and by somewhat extravagant claims, but it "sold the idea."

As a result of this second stage, the third or experimental stage was inaugurated. Here and there the idea took hold and we saw more or less sporadic attempts to initiate the movement. Aroused by the facts presented in various studies and surveys showing the great wastage in our schools, by the conditions in labor and industry under which boys and girls under sixteen years of age were working, by the peril of the "dead-end" job and by the personal tragedy and economic loss of the misfit, groups of men and women started placement bureaus whose object was to aid young people to find suitable positions and to give advice regarding the kind of vocation each should enter. We are now far enough removed from these first attempts, these initial trials, to judge the results with a fair degree of impartiality and accuracy. Some of these met a genuine need, they performed a real service and some are still in existence, though usually in a modified form. Not a few were flat failures, no one can deny this fact, and in some places the very name of vocational guidance is anathema. Any mention

of the term brings an instant reaction against it, and what is worse, a smile.

At present we are in what might be called the fourth stage, when we begin to take account of stock, to analyze the results of past failures, to determine causes, and to plan for the future. It is a time of sober second thought, when we are seeking to clarify our aims and to build strong on a sure foundation. It is fully time for us to bend our energies in this direction. In many quarters we meet indifference or even opposition to the introduction of vocational guidance. Almost as bad, even worse in some respects, is the uncertainty, the lack of harmony and coördination of effort among its advocates. The chief cause, both of the opposition and of the lack of coördination, is to be found in a common failure to see clearly the objectives and the purposes of guidance itself.

Practically all the failures that have resulted from hasty introduction of vocation guidance can clearly be traced to the extravagant claims made for it and to the half-baked ideas of those who introduced it. People are everywhere searching endlessly for panaceas, for educational "get-rich-quick" schemes, for easy short-cuts, and, even though they have been fooled again and again, they still remain gullible. Such short cuts do not exist and never can exist. We must forge out our educational as our social and economic destiny by the sweat of the brow, by hard unremitting toil, and it is good that it is so. Lured by the extravagant claims of some of these promoters, who often wanted to create a place for themselves, school authorities and others got the notion that vocational guidance was going to solve the educational and industrial ills and remove the possibility of the misfit. While the plan was in the stage of talk, all was well, but as soon as they tried to translate it into action they had little to show. They simply could not make good their claims. The result has been to cast suspicion upon the whole movement. Much of this opposition has grown out of the misconception that vocational guidance means deciding for an individual what he should do and then making him do it. This is not guidance, it is prescription, and every true friend of guidance is and must be unalterably opposed to it.

But the friends of guidance are by no means in complete agreement upon all points. Many conflicting ideas have come to light in the various discussions. Some of these at least may be briefly mentioned. Some say that the only thing that is definite and really worth while about vocational guidance is placement and

counseling when the boy wants a job. It is then that he feels the need and is reaching out after help. Everything else, they say, is visionary and impractical. Others maintain that this is the least important part of guidance: most of the effort should be expended before—several years before—the individual needs to get a job. Some say that we must give actual advice and help in finding the job. Others say that “the only time when it is safe to give advice is when you know that the other fellow won’t follow it.” Going more deeply into the fundamental elements of the question, some maintain that vocational guidance in the narrow sense is the only form of guidance worthy of consideration, that other forms, educational, health, civic, ethical are vague and indefinite and can best be considered from the standpoint of the job, if they need to be considered at all. Others are frankly afraid of over-emphasis upon the vocational, the job side of guidance, fearing that this will result in a one-sided view of the boy, and in a lop-sided development. There are some also who try to make the term “vocational” do duty for all forms of human activity. For example, playing the violin for pleasure is vocational; playing checkers or tennis is vocational; the activities of the father or mother are vocational. They say that “vocational” should include any form of occupation, whether “vocational” or not.

There are still other differences in conception, but these are quite sufficient to show the need for careful analysis and definition of terms. But this condition of uncertainty or even of direct opposition need not be deplored. On the contrary it is a most hopeful sign of life, for it means that we have begun to think. Such a condition always precedes a period of real constructive effort. During the past few months several associations have been considering and discussing the fundamental principles of vocational guidance. Such study is most helpful and timely. It should now be our aim to discuss fundamental issues, and to contribute, if possible, to a clearer understanding and a better definition of guidance. In doing this, it seems very well to start at the very foundation, and we should make no apology for doing so. Moreover, the unmodified term “guidance” may best be used, if we are not to begin with any presuppositions regarding the kind of guidance that is most important. What then, is guidance, and how is it related to education?

Education is concerned with the training and development of individual human beings. In general, it seeks to secure the

highest development of each individual and to fit him for effective participation in various social activities on those levels where he can do his best work. In achieving these objectives, two factors must be taken into account—the individual and society. The individual is the starting point; he is the one to be educated; the one in whom the changes we call education must take place. He must form certain habits, develop certain skills, interests, attitudes, and ideals. It is the function of society to determine in large measure what these habits, skills, attitudes, and ideals shall be. There are certain social needs that must be met, there are certain things that individuals must be trained to do, in order to provide and maintain an efficient social organization.

A large, possibly the largest, part of education, considered from the point of time and energy expended, is concerned with the formation of habits, the development of skills, attitudes, and ideas. But this is by no means all of education. Education is not only formative; it is selective. If all people were exactly alike in native ability, in physical and mental make-up; and if the habits, skills, attitudes, and ideals that we wished to form and develop were all the same, the task of education would be greatly simplified. All we would need to do would be, in the words of Comenius, to “teach all things to all.” Education would then be non-selective; it would be purely formative.

But individuals are not alike. They differ in regard to almost every known category, in physical health and strength, in mental qualities, in intelligence, in special aptitudes as well as in racial and religious ideas and in home conditions. On the other hand, social needs are almost infinitely varied. Industry is become more and more specialized; we need a great diversity of workers, not only in various occupational lines, but in citizenship and governmental activities as well. We can not train all people alike, if we would; and we must not, if we could. Education must then be selective. There are, to be sure, certain fundamental habits that should be the common possession of every one in a democracy; these we must secure, but even some of these are rather vague and indefinite at present. Beyond these common factors the variety is infinite. In this complex social organization of ours we need many different types of workers, we can use every kind and degree of skill and intelligence. We have a place for the broadly trained, highly intelligent manager, and for the skilled specialist whose deft touch is utilized in a narrow field.

One of the most important aspects of education is that of discriminating between individuals with their varying capacities, abilities, aptitudes, and interests, and of so arranging our social system that each one will choose, prepare himself for, and find that place in society where he can serve best and at the same time attain his own best development. This is the guidance aspect of education. It is concerned with times of choice, times when the ways part, when it is necessary to make a selection of one course of action or another. Fundamentally any aid, directly or indirectly given, which helps in any choice is guidance, whether this is a choice between going out with umbrella and raincoat or without them, or between beef and pork for dinner, or between the Home Economics course and the College Preparatory course, or between the vocation of the physician and that of the carpenter. Any help given for any of these choices is guidance, whether by way of a long period of preparation or by definite advice given at the time. It is thus one of the absolutely essential aspects of education. In one sense, it is one of the most important objectives of education. Every day is a day of choice and to be prepared to make intelligent choices, whether of cereal at breakfast, or of mayors, governors, and presidents at election time, is to be truly educated.

Interpreted thus, guidance is interwoven with every part of education. But, it may be said, this makes it too indefinite, too diffuse, too widespread to be of any practical value. That is true, but it is no more the case with guidance than with education in general. Every act, every situation, every experience in life is or may be educative. We are mistaken if we think that education is confined to the more or less formal, definitely organized work of the school. Children receive a very important part of their education at home, on the street, at the movies. But we cannot depend upon these to achieve the objectives of education. In order to make sure that certain habits are formed and that certain skills and attitudes are developed, we single out certain of these for special emphasis, and we place in the hands of experienced teachers the duty of seeing that these ends are realized. It is the same with guidance, every activity of the school helps or should help the pupils to choose wisely.

This help is given, for the most part, unconsciously by the teacher, and has always been given. There are certain choices of vastly more importance than others; these may truly be termed

crises in the life of the individual, the places where the parting of the ways is more pronounced, where the choice is more vital to the whole after-life of the individual and to society as well. Among such crises are the choice of the curriculum in the high school; the choice of going to normal school or college; the choice of life work; the choice of specialized citizenship activities; even the choice of a wife or of a husband. All of these are of unusual importance for good or ill. As such they need special attention, special preparation for, and special organization. Whether any of these or all of these, or many others, shall be definitely provided for in our schools depends largely upon whether we consider them really important, or whether our schools can be so organized as to give effective help.

Let us distinguish then, clearly between the two aspects of education—the selective aspect and the formative aspect. *Guidance is concerned primarily with selection, the choice of habits and skills to be developed and not with the formation of habits.* To be sure, the way in which a person forms a habit, the degree of skill that he attains is extremely helpful in proper guidance; this helps in diagnosis, and diagnosis is the first step in guidance, but the actual formation of habits is not in itself guidance. A physician examines a man, he diagnoses his case and he suggests certain exercises for him to do—all this is guidance—the actual performance of the exercises is not guidance, but is like the habit formation aspect of education. A part of the examination may well consist of certain exercises that will enable the physician to judge better the action of the heart and muscles, but this is a part of the diagnosis and hence of guidance. Guidance studies, analyzes, and lists individuals with their varying capacities, abilities, and aptitudes; it studies, analyzes, and lists social needs in all their complexity, and seeks to arrange matters so that each individual will form those habits, develop those skills, attitudes, and ideals, and choose those lines of activities that will be best for himself and for society.

As has already been said, it is impossible to separate these two aspects, just as impossible as it is to separate reading from geography or physics from mathematics, but it is helpful and necessary to single out this one aspect, guidance, for special treatment. It is of especial importance just now, because attention is being directed as never before towards individual differences and their causes. This question is being very carefully studied and we are

generally realizing that it is of very great importance that all differences between individuals should be recognized and that many of them should be utilized and developed. We believe that this will necessitate a radical change in our educational system and in our methods of instruction. While it will not and cannot solve all educational problems, it should be of material assistance in improving conditions. Guidance, then, is the diagnostic, the selective aspect of education.

What then, are the different forms of guidance and just how are they related? Guidance, like education is unitary, but it is helpful to single out now one phase, now another for special consideration. Here we can not do better than to follow the trail blazed by the committee that formulated the Cardinal Principles of Secondary Education. They have laid down this principle that the objectives of education must be determined by the activities of human beings. These activities they have grouped under four heads: home membership, citizenship, leisure time, vocation. In order to attain these, three other objectives must be realized: health, command of the fundamental processes, ethical character. While these do not cover all human activities, they are sufficiently inclusive for our purpose. The only one which needs to be changed here is that called "leisure time." All of the others are, in a sense, ends, the worthy employment of leisure time is only a means. The chief end to be obtained by the use of leisure time is personal development. Hence this may well be changed to "personal development." If these are the objectives of education, we can properly speak of the organization of work which is calculated to attain a certain objective as that sort of education. For example, if the work of the school is so organized as to attain the end of citizenship, we could call this civic education. We could then distinguish in the same way civic guidance, and say that when individuals are diagnosed and civic needs are analyzed and the effort is made to have the individual select habits and attitudes that he will form and develop, and choose civic activities where he can be of most use to the state and to himself, this is "civic guidance."

At present, the one objective that is most commonly singled out as worthy of special consideration is vocation. When the work of the school and of society is so organized as to provide definite training that fits a person for a vocation, we call it vocational education. In the same way we can separate out vocational

guidance. Vocational guidance, then, is primarily concerned with diagnosis of individuals with reference to the job. It is "designed to help the individual to choose, to plan his preparation for, to enter upon, and to make progress in an occupation." It has continually in mind the job and is not concerned primarily with health, character, home membership, citizenship, or self-development, except as these will help in the job.

Vocational guidance is, then, only one phase of guidance but a very important one. There is unquestionably grave danger in the narrow vocational point of view. The job, while important, is not all-important, and if we confine our attention too narrowly to the job, we shall be very likely to have a one-sided view of the individual, and neglect the other very important objectives mentioned. But since vocational guidance, like vocational education, is more easily organized and more definite in its objectives than, let us say, civic guidance, it is possible that we should organize other forms of guidance around this as a center and seek to attain all the objectives at the same time, but this is by no means certain.

If the principles here laid down are correct, some of the false conceptions have doubtless already been cleared away. Vocational guidance is not all there is to guidance, nor is it necessarily the most important, but it is the form that is most clearly recognized, the most definite, and the most easily organized. While it might be desirable to make the word "vocational" do duty for the whole range of activities, it is not at all probable that it will ever be generally recognized in this meaning. There is a popular misconception that should be mentioned and removed. Some think that "vocational" refers only to industrial, agricultural, or the lower grade occupations, and does not include professional occupations. This is, of course, very wide of the truth. Vocational guidance is concerned with all kinds and grades of occupations. It includes all activities connected with recognized profitable employment, unskilled, highly skilled, trade, and profession.

Another question is, when shall guidance be given? Should it be given only at the time when the individual is confronted with the necessity for a choice or can it be given earlier? Guidance is concerned with choice, it has to do with crises, and as such it should help at the time when a choice is to be made, but the best kind of guidance is the kind that prepares one in advance for the choice; it forecasts the crisis and paves the way for intelligent

choice. It helps the individual to secure the data necessary for an intelligent decision.

Should we give advice to young people or content ourselves with presenting facts to them and with the work of preparation already described? It is usually true that the more one has tried to give advice at the times of choice, the more he shrinks from it, and the less he thinks of the practise. In general, the better the preparatory work has been done, the less necessity will there be for actual advice. Of course, we cannot entirely escape responsibility for giving advice, but when we do give it, it should always be buttressed by actual facts and experiences.

It hardly seems necessary to discuss compulsion as a method of guidance, for surely no reader of the *Educational Review* needs enlightenment on that point. Clearly it is no part of the purpose of guidance to choose for a person what he shall do, to prepare him for it, and to make him do it. This is never desirable nor permissible as an educational process. In times of great national crisis, as in the late war, this method may, of course, be not only desirable, but absolutely necessary. And it might always be desirable as a method of training in an autocracy, but never in a democracy, whose ultimate purpose is the good of each individual citizen. We shall continue to employ negative prescription in certain lines of work, where we refuse to allow a person to perform a certain activity, if he lack the qualities or the skills necessary to do it successfully. Thus we shall refuse to allow a man that is color blind to become a locomotive engineer. We may refuse to allow an osteopath to practise medicine, because he has not prepared himself in *materia medica*. Nor do we allow a person to teach in our public schools unless he has a certificate that is supposed to guarantee a certain minimum of training. This field of negative prescription will inevitably be enlarged whenever and wherever public safety or the public good demands. But this is far removed from positive compulsions. We may surround an individual with forces that will predispose him to a certain choice, we may give him the facts and experiences that should enable him to choose intelligently, but in the last analysis he must make his own choice. The purpose of guidance is intelligent self-guidance. This only is democratic, this only is educative. This is the point at which so many people fail. They are so afraid that the boy will make an unwise choice that they cannot leave him alone. They fail to realize that efficiency is not the chief purpose of

democracy; it is the development of character. Character cannot be developed except by responsibility, and responsibility is dependent upon choice. When there is any real choice between a lower and a higher, there is always the possibility of choosing the lower. But it is only thus that we can accomplish the purpose of education in a democracy.

In conclusion, let us reaffirm our faith in guidance and in vocational guidance. It is fundamental, it underlies all that is best in education. The guidance movement has been long on the way; it has passed through storms of varying intensity; the criticisms directed against it and its very factions have served but to purify it, and to make clearer its real position and its real objectives. It remains for us to make even more definite and clear the purposes underlying it—to come to a common understanding and agreement upon the fundamental issues and to organize our forces and develop our methods in such a way that we shall actually attain the objectives that we have set for ourselves. We must admit that, as yet, some of our work is indefinite, ill-defined, and lacking in organization. The needed definiteness and organization can be accomplished only by the most careful and painstaking study and experimentation, by vigorous criticism and evaluation of results, and by the whole-hearted coöperation of all who are in any way interested in the problem.

Principles of school pupil-guidance. As pupil-guidance is now conducted in all schools, each school must decide only as to whether it will provide haphazard or systematic guidance.

Increased high-school enrolments and increased variety of subjects offered in school increase the need for guidance.

Guidance should be based upon pupil-records, which furnish as full an account as possible of home life, occupational activities, school life, mental capacities, aptitudes, and interests.

School counseling is a technical task which demands the services of expert counselors.

Democracy of opportunity demands that all pupils have the best available counsel about themselves.

Individual needs can be met only by educative activities which result from personal, remedial, civic, vocational, and cultural guidance.

When based upon vocational considerations, educational decisions should be regarded as tentative until final choice is necessary.

Pupil-guidance improves both teaching and learning by increasing the coöperation between pupils, teachers, and parents.

Adequate pupil-guidance leads to the substitution of ever higher pupil-objectives for lower objectives.

Guidance is concerned primarily with "the choice of habits and skills to be developed and not with the formation of habits."

Education should be so organized that each pupil will "choose, prepare himself for and find that place in society where he can serve best and at the same time attain his own best development."

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Cite one example each of beneficial negative guidance, beneficial positive guidance, detrimental negative guidance, and detrimental positive guidance.

2. To what extent has positive guidance aided in the motivation of your own or your classmates' academic work? If possible, cite examples.

3. If you are familiar with guidance in any of the forms reported by Edgerton and Herr, describe such guidance and evaluate its results.

4. Until very recently many persons have believed in and advocated educational guidance, but have had no data to substantiate their claims for such guidance. Cite statistical data which indicate the value of educational guidance when conducted by experts.

5. What is meant by the "exploratory function" of the junior high school?

6. What do you consider as the outstanding points of strength of the guidance programs of Berkeley and Oakland? To what extent could these points of strength be provided in the school which you attended?

7. If you were a counselor, what errors would you seek to avoid and what benefits would you seek to give?

8. To what extent do the data of Chapter VI support Brewer's statements in regard to the high school as a selective agency?

9. Compare the college entrance guidance which you received with that proposed by Brewer. Evaluate Brewer's plan in the light of your own experience.

10. Prepare a brief of Lyman's discussion of the guidance program of the Holmes Junior High School.

11. To what extent can the secondary school properly offer vocational guidance? As conducted in schools, what is the essential purpose of such guidance?

12. Support as fully as you can the principles at the end of this chapter.

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PART IV

SECONDARY EDUCATION IN FOREIGN COUNTRIES

CHAPTER XI

SECONDARY EDUCATION IN GERMANY, FRANCE, AND ENGLAND

Certain experiences of foreign nations are needed as counsel in planning American High Schools. A general discussion of German and French schools is given in order to orient the student as he reads the remainder of the chapter. A similar discussion of English schools is omitted because of the fulness of Dr. Kandel's treatment of the schools of that country in one of the readings of this chapter.

German schools. German schools are organized on the gymnasial plan, the essential divisions of which are a three-year elementary school and a nine-year secondary school. Children enter the elementary school at six years of age and the Gymnasium at nine. Within this simple pattern there are, however, many different designs.

The nine-year Gymnasium is a direct outgrowth of the Renaissance. The early Gymnasien, as organized by Johann Sturm in the sixteenth century, were only six years in length. These schools were designed to teach German boys knowledge, eloquence, and piety by means of the writings of the Greeks, the Romans, the Church Fathers, and the Bible. As the task proved too great for the time allotted, the schools became nine-year institutions. The six-year Gymnasium still exists, however, in localities which are unable or unwilling to supply sufficient patronage to maintain a nine-year school.

Besides schools of different lengths, there are divisions of Gymnasien according to the curricula offered by them. The original Gymnasium offers a classical course; the Realgymnasium, a modern language-science course; the Oberrealschule, a technical course. Children or their parents are required to decide, when the boys are nine years of age, which curriculum is to be pursued. The six-year schools which offer shorter courses of the same character are, respectively, the Progymnasium, The Prorealgymnasium, and the Realschule. Although all elementary schools prepare boys

TABLE XXXIV
A TYPICAL GYMNASIUM PROGRAM OF STUDIES

	SCHOOL YEARS									TOTAL YEAR- HOURS
	I	II	III	IV	V	VI	VII	VIII	IX	
Mathematics	4	4	4	3	3	4	4	4	4	34
Natural science	2	2	2	2	2	2	2	2	2	18
Geography	2	2	2	I	I	I	—	—	—	9
History	—	—	2	2	2	2	3	3	3	17
Religion	3	2	2	2	2	2	2	2	2	19
German	4	3	3	2	2	3	3	3	3	26
Latin	8	8	8	8	8	7	7	7	7	68
Greek	—	—	—	6	6	6	6	6	6	36
French	—	—	4	2	2	3	3	3	3	20
Penmanship	2	2	—	—	—	—	—	—	—	4
Drawing	—	2	2	2	2	—	—	—	—	8
Gymnastics	3	3	3	3	3	3	3	3	3	27
Singing	2	2	2	2	2	2	2	2	2	18
Year-hours	30	30	34	35	35	35	35	35	35	304

for these schools, the Vorschule is a three-year school which is conducted solely as a preparatory school. The eight-year elementary school known as the Volksschule or the nine-year Mittelschule may be attended for three years as preparatory to any of the secondary schools.

An obvious defect in the German system is that a secondary curriculum must be chosen when boys are only nine years old. In order to correct this defect, a new type of school known as the

Reformschule has been organized in certain cities. Before the Great War opened, there were nearly two hundred Reformschulen in Germany. The programs of study of these schools are so planned that boys need not make their final choice of a curriculum until they are fourteen years of age. That is, secondary education is begun as formerly when the boys are nine years old. At that time, however, no language save French which is common to all gymnasial courses is begun. At the age of twelve, boys may select either the Gymnasium course with two hours a week of French and ten hours a week of Latin or the Realgymnasium course with four hours of French and eight hours of Latin. At the age of fourteen, choice is made between the curricula by electing Greek if the Gymnasium course is to be followed, or English if the Realgymnasium course is to be taken. Other differences exist between the curricula of the Reformschule, but these are the ones which finally determine which curriculum is to be followed.

Typical German curricula are given in Tables XXXIV-XXXVII. To the American student the striking characteristics of these curricula are the early beginnings of and the large allotments of time to foreign language and the important place given to religion. Reasons which necessitate the early selection of a school are found in these tables. For example, if a pupil enters an Oberrealschule at the age of nine and continues therein for three years he will have credits in excess of those required in a Gymnasium in mathematics, history, German, and French, but he will be deficient in Latin. As he would have great difficulty in making up a Latin deficiency of twenty-four year-hours, he would be practically unable to change to a Gymnasium. Similar difficulties would be experienced by a pupil who wished to transfer from a Gymnasium to an Oberrealschule. Between the Gymnasium and the Realgymnasium, the difficulties of transferring at the age of twelve are comparatively slight; later transference is, however, very difficult. The Reformschule avoids this kind of difficulty by offering uniform subjects for all pupils until the fourth year of school. The fourth and fifth years are also uni-

TABLE XXXV

A TYPICAL REALGYMNASIUM PROGRAM OF STUDIES

	SCHOOL YEARS									TOTAL YEAR- HOURS
	I	II	III	IV	V	VI	VII	VIII	IX	
Mathematics	4	4	4	5	5	5	5	5	5	42
Natural science	2	2	2	2	2	4	5	5	5	29
Geography	2	2	2	2	2	1	—	—	—	11
History	—	—	2	2	2	2	3	3	3	17
Religion	3	2	2	2	2	2	2	2	2	19
German	4	3	3	3	3	3	3	3	3	28
Latin	8	8	7	5	5	4	4	4	4	49
French	—	—	5	4	4	4	4	4	4	29
English	—	—	—	3	3	3	3	3	3	18
Penmanship	2	2	—	—	—	—	—	—	—	4
Drawing	—	2	2	2	2	2	2	2	2	16
Gymnastics	3	3	3	3	3	3	3	3	3	27
Singing	2	2	2	2	2	2	2	2	2	18
Year-hours	30	30	34	35	35	35	36	36	36	307

TABLE XXXVI

A TYPICAL OBERREALSCHULE PROGRAM OF STUDIES

	SCHOOL YEARS									TOTAL YEAR- HOURS
	I	II	III	IV	V	VI	VII	VIII	IX	
Mathematics	5	5	6	6	5	5	5	5	5	47
Natural science	2	2	2	2	4	6	6	6	6	36
Geography	2	2	2	2	2	1	1	1	1	14
History	—	—	3	2	2	2	3	3	3	18
Religion	3	2	2	2	2	2	2	2	2	19
German	5	4	4	3	3	3	4	4	4	34
French	6	6	6	6	6	5	4	4	4	47
English	—	—	—	5	4	4	4	4	4	25
Penmanship	2	2	2	—	—	—	—	—	—	6
Drawing, Freehand . .	—	2	2	2	2	2	2	2	2	16
Gymnastics	3	3	3	3	3	3	3	3	3	27
Singing	2	2	2	2	2	2	2	2	2	18
Year-hours	30	30	34	35	35	35	36	36	36	307

TABLE XXXVII

TOTAL YEAR-HOURS OF WORK IN THE DIFFERENT CURRICULA OF A
REFORMSCHULE. (FRANKFORT PLAN)

	GYMNASIUM CURRICULUM	REALGYMNASIUM CURRICULUM
Mathematics	37	42
Nature Study	10	10
Physics	8	9
Chemistry	—	6
Geography	9	13
History	16	15
Religion	19	19
German	31	31
Latin	52	40
Greek	32	—
French	36	44
English	—	18
Penmanship	4	4
Drawing	8	16
Total	262	267

form except in the case of foreign language, where the differences are slight. This virtually postpones the necessity for final choice of curriculum until the pupils are fourteen years old.

Secondary education has never been popular in Europe. In Germany several conditions have combined to restrict educational opportunities; namely, the tuition fees exacted in all secondary schools, the small number of free scholarships, and most important of all, the strong popular tradition favoring early elimination from school. In the year preceding the Great War, while less than one per cent of German children of the ages six to fourteen were out of schools, only seven per cent were attending secondary schools. As children enter the secondary schools at the age of nine, this percentage shows that few began courses in secondary schools; also as no secondary schools are open to pupils at the completion of the Volksschule, this percentage shows that even boys do not commonly attend secondary schools at all.

The education of girls beyond the elementary grades was not

common in any country at the time the German school system was established. Against the education of women there has been, therefore, not only such prejudice as existed until the last century in America, but also the strong influence of a well-established national system which provided education for boys only. The many types of schools which have recently been organized for girls follow roughly the gymnasial plan. Some of these schools train girls for teaching, a few train for entrance to a university, others offer general courses without fulfilling the needs of prospective university students. The later readings of this chapter show that interest in the education of girls is increasing.

In addition to schools which are ordinarily classified as secondary there are other which offer subjects commonly included in the programs of many American high schools. These schools include the middle schools, "citizens' schools," vocational schools, continuation schools, and trade schools. One of the reasons for the establishment of the many German vocational schools is that the traditional schools make no provision for vocational education.

Another important school to be referred to later is the folk high school. This type of school has been introduced recently from Schleswig-Holstein where it has met with strong popular approval. The Danish form of this school was originally in Schleswig in the middle of the nineteenth century for men and women over eighteen years of age. It offers training in the following subjects: Danish history, language, literature, and music; science; physical training; and vocational work. The account given by Orr of this type of school in Germany shows that folk high schools are doing for adults much that American high schools attempt to perform for adolescents.

German schools provide intensive training for secondary-school teachers. Such teachers must be graduates of a gymnasial and a university course and must have pursued professional courses for two years—a seminar year and a practice year—after finishing the university. In terms of years, this training includes twelve years prior to graduation from the *Gymnasium*, three years in the

university, and the two years of educational theory and practice. In terms of credits in American schools, a graduate of a Gymnasium has completed the equivalent of two years in American colleges; he then attends a university three years—this would be equivalent in time to a year of graduate study; he then pursues professional studies one year as his seminar year and one final year as his practice or probation year—this is equivalent in time to that required in America for a doctor's degree. The seminar year and the practice year are spent in a Gymnasium under the *Director* of the school. The work consists of a study of educational theory practice under the skillful direction of efficient instructors. At the end of this period of training the young teacher often has to wait several years before he receives an appointment. He is willing to wait for the appointment, however, because teachers belong to a high rank in civil as well as social and professional circles. Women who expect to teach prepare as men do except that provisions have not been made for the seminar and practice years. In spite of the low salaries of teachers—fifteen to eighteen hundred dollars in the best positions before the war, teachers have been able to live comfortably. In comparison with other professional men, the teacher was fairly well-paid. His tenure is for his teaching life: after forty years of teaching or at the age of sixty-five he retires upon a pension which amounts approximately to three-fourths of the last year's salary.

PEOPLE'S HIGH SCHOOLS IN GERMANY¹

BY WILLIAM ORR

In a classroom of the "Real Gymnasium" of a suburb of Berlin there may be found from half past 6 to 8, on each Monday evening during the winter months, a group of people, most of whom are employed by day in the great factories of the "Allgemeine Elektrische Gesellschaft" (General Electrical Co.) or in the automobile industries. This group numbers 20 men and women, with both sexes equally represented. The room is plainly furnished, but electric lamps give a good, even brilliant, light.

¹ *School Life*, VI, No. 10, pp. 1-2. May 15, 1921.

Students of the People's High School.—One, however, soon becomes so intent in watching the students that the surroundings are forgotten, for these men and women are members of the local unit of the "Volkshochschule"—People's High School—an educational enterprise, scarcely two years old, one of the significant results of the revolution of 1918, intended to give the citizens of the new republic that equipment in knowledge and in capacity to do their own thinking as shall fit them to discharge aright their civic and political duties and responsibilities.

In age the students range from 25 to 40 years. Most of them are wage earners, engaged in manual labor and in the ranks of skilled workmen. A few of the women are housewives. An army overcoat shows that the wearer has seen war service. Another has on a somewhat frayed soldier's fatigue jacket. All bear the signs and marks of stress and strain in that struggle for a livelihood that goes on to-day in the homes of the common people in Germany. For the time, however, their cares and anxieties are forgotten as they dwell in the world of intellect and of spirit in which material things have no part.

Variety and animation mark the exercises.—The instructor is a man of perhaps 35 years of age. His methods are those of a leader who provokes and directs discussion, in marked contrast to the practice of the university professor who delivers his lecture in prosaic, perfunctory fashion, not permitting, least of all inviting, comment from his hearers. In this class, however, views are interchanged, and there is a clash of opinions, and at times an outburst of laughter, that give variety and animation to the 90 minutes of solid, substantial study of two writers, Storm and Keller, who portray the contrasting temperaments of the north and south German folk, for these people's high schools are not vocational in character, but are definitely and solely institutions for liberal and cultural training.

In the fall of 1920, a little over a year from their inception, these schools in Greater Berlin had an enrollment of over 4,000, and during the winter semester, January to March, 1921, there were 147 courses taught by 70 instructors, picked men from the faculties of high schools and universities. Eighty-four community groups of working people are coöperating in this enterprise. It can be readily understood, therefore, that this movement is of great significance and of tremendous possibilities in the develop-

ment of free political institutions through an intelligent and trained citizenship.

Movement is extending rapidly.—This educational movement is well under way also in Thuringia and in Württemberg, and is extending over Germany as rapidly as organizations can be established.

The broadly representative and democratic character of these schools is shown by the methods and procedure followed in setting up the system of the Volkshochschule. A preliminary survey of the resources of the area as regards available teachers and equipment and the probable demand for instruction is made by the field agent of that division of the ministry of education which has to do with these schools.

When conditions are favorable, a conference is held of representatives of the communities, of the labor organizations, and of the faculties of schools and colleges. This meeting is at a place where there is freedom from all distracting and disturbing influences—generally a quiet country town. The sessions are held in the morning, while the afternoons and evenings are given up to informal group gatherings, to outings and recreation. Ample time is taken for a full and free consideration of all questions. Usually the conference lasts for two weeks. An especial effort is made to ascertain the desires of the people on the subjects to be taught, the methods of instruction, the places of meeting, and the personnel of the teaching force.

Based on community, union, and university.—If the conference acts favorably, the next step is to create an organization for the Province or municipality. Here, again, the democratic character of the system is shown. In Berlin, which may be taken as an example, the People's High Schools are based on three elements—the communities, organizations of working people, and the public high school and university; the communities assure financial support, the unions and clubs of the laboring classes hold and maintain the confidence, interest, and coöperation of the common people, and the recognized institutions of learning insist on high standards of instruction.

In the fall of 1919 the leaders in the Volkshochschule movement called together representatives of these groups and agencies in a conference at which rules and regulations under which the schools were to be operated were unanimously adopted. By these regulations, the management is vested in a board of directors responsible

to a general committee made up of representatives of the communities supporting People's High Schools, or organizations of workers, of educational departments, of political groups, of the students, and of the department of education. Each division of the general committee chooses its delegates to the board of directors, to whom are added representatives of the university and of the technical and commercial higher schools.

The superintendent is chosen annually.—The executive of the system of Volkshochschule, the superintendent (Geschäftsführer) is selected by the board of directors from a list of candidates submitted by the university. The term of service is one year, at the end of which, if the incumbent fails to receive a majority vote of the directors, he must vacate his office.

In order to secure unity of action between the people's high school and the university, an advisory council has been formed of representatives of these two institutions.

Large significance attaches to the origin of the people's high schools. They are a direct outcome of the revolution of 1918. With the utter collapse of the political and social system in November, 1918, Berlin was filled with multitudes of people without occupation. Far-sighted men and women sensed the urgent and serious problem created by these conditions. As a remedy they outlined the general plan and program for a system of evening high schools whose aims should be to raise the level of the individual, of personality, in the social organism by putting at the service of the common people Germany's rich resources in liberal and cultural studies.

Inadequate preparation for citizenship.—It should be understood that while every child in Germany receives an elementary education, a comparatively small number attend the high schools. Excellent as the instruction is in the lower schools, or folk schools, it does not prepare adequately for the duties of citizenship in a free State. Therefore the people's high schools aim to develop in these students intellectual independence, including enriched mental resources, good judgment, and the capacity for logical thinking.

Much use is made of mathematics and pure science, as the study of these subjects gives habits of ordered thinking, ability to consider, weigh, and test evidence, and an insight into the world of ideas. Art, literature, and music make for the fuller and more abundant life. Economics, political science, and sociology give

a grasp on the universal elements and factors in the problems of the new democratic order. History puts at the service of the citizen the experience of mankind whereby it has step by step advanced in civilization. Philosophy and religion are included as they relate to ultimate problems of existence and to the inner meaning of life. The courses in all subjects are so planned that the student may advance year by year from the introductory and elementary to advanced topics.

Problem method is gaining ground.—A notable feature of these schools is the method of instruction. The purpose is increasingly to use discussion and interchange of views and opinions, in which process the teacher is a leader and guide, and not one who imposes his own knowledge or convictions on the students. It can be easily understood that such a radical change from the stereotyped, formal methods of university lectures is not easily made. By no means do all the teachers in the Volkshochschule comply with these requirements. The subject matter in any course is so great, that, apart from the force of habit, there is a strong temptation to be didactic and even dogmatic in presenting each topic and to regard discussion as a waste of valuable time. Yet, especially in the case of the younger instructors, the discussion, or problem, method is gaining ground and force.

Teach pupils how to think.—Two tendencies are guarded against in these high schools, that toward vocational education and the inculcation of any particular social, political, or religious doctrine. As regards vocational training, the school system of Germany makes abundant provision for the teacher of trades, business, and professions. As regards the second limitation, self-imposed, the function of these schools is not propaganda. They are intended to give the material for thought and how to think, not what to think. And herein is their promise as a helpful influence in the evolution of the new Germany.

French schools. French secondary schools, like those of Germany, are fee schools. There are two kinds, the lycée and the college, both of which are described in the articles by Merás and Kandel. The French boy enters the secondary school at the age of five or six where he pursues an elementary school course until he is ten or eleven; this completes his preliminary cycle. He

then begins the higher seven-year course, or, as Americans would say, the secondary school proper, which is divided into two parts: the first cycle of four years, the second cycle of three years, which includes a final year in either a "philosophical" or a "mathematical" course. Boys regularly complete this course, therefore, at the age of seventeen or eighteen at which time they receive the bachelor's degree.

The seven-year secondary school offered until 1923 a choice of either a classical or a modern language curriculum during the first cycle of four years. The second cycle still offers a choice between four curricula: the classical, the Latin-modern language; the Latin-science and the science-modern language. In the third year of the second cycle, students specialize upon either mathematics or philosophy. In addition to this kind of secondary education, there have been developed specializing curricula some of which are technical while others are predominantly military. The division of the secondary period into cycles is advantageous to both students and administrators. It enables students to complete definite, orderly units of work. At the end of a cycle the courses are drawn together and examinations held. If the pupil leaves school at the end of the first cycle, he has a thorough grounding in secondary subjects; if he continues school, he is not hampered by the lack of training in the elements of secondary-school subjects. Teachers and administrators are able to organize sequences which are both unified and comprehensive. The courses of study of the cycles are described in the readings which follow.

The training of secondary school teachers in France is conducted so as to select only persons of superior scholarship. "The professors of the highest rank must have the title of *agrégé*. The education necessary to pass the examination for this title represents five years in elementary studies, seven years in secondary studies, one year or more in preparation for the competitive examination for admission to the higher normal school, and three or four years in a professional school preparatory to the aggregation for the title *agrégé*. This title represents eight orders of subjects;

viz., philosophy, grammar, letters, history and geography, modern language, mathematics, physical science, and natural science.

"This course of training differs from the training of a graduate of an American college in the early beginning and the extent of specialization upon the major subjects, and in the drill necessary to the final competitive examination. As a sifting or selective process, it is superior to the American method of certificating teachers upon graduation from approved courses. But it raises the standing questions of, 'specialization versus breadth,' and 'scholarship versus personality.' In rank below the *agrégés* are the regular teachers who hold the master's degree, those who hold the bachelor's degree, and those who have only the primary teacher's certificate."²

FRENCH SECONDARY SCHOOLS; THEIR ORGANIZATION AND CURRICULUM PROBLEMS³

BY ALBERT A. MERÁS

1. *Organization.* All public schools, *lycées*, colleges, and universities in France constitute the University of France, organized by Napoleon I in 1808. The minister of public instruction, who is a member of the French cabinet, is Grand Master of the University of France, usually called *l'Université*. He is assisted by the *Conseil Supérieur de l'Instruction Publique*, consisting of five Academicians, nine educators at large, eighteen professors representing *l'enseignement supérieur*, ten professors representing *l'enseignement secondaire*, six teachers from the primary schools, and four from private institutions.

There are three orders of public instruction: (1) *l'Enseignement Primaire* is given in primary schools, in superior primary schools, and in preparatory departments of *lycées* and colleges. (2) *l'Enseignement Secondaire* is given in *lycées* and colleges. There is practically no difference between *lycées* and colleges as far as courses of study are concerned. *Lycées* are directly administered by the state, and colleges are administered by communes, cities,

²David E. Cloyd. *Modern Education in Europe and the Orient*. 1917. P. 107. Reprinted by permission of The Macmillan Company.

³From "The 'Eternal Controversy' in French Secondary Education" in *Teachers College Record*, XXIV, 426-437, November, 1923. Abridged.

or private organizations under the surveillance of the state. (3) *l'Enseignement Supérieur* is given in the universities.

Secondary education proper covers a period of seven years from the age of eleven to eighteen years, comprising the sixth, fifth, fourth, third, second, first, and the mathematics or philosophy forms. This does not include the primary instruction of five years given in *lycées* and colleges for the children of the well-to-do *bourgeoisie*, who prefer the preparatory departments of *lycées* and colleges to public primary schools. Hundreds of scholarships open the doors of French secondary schools to pupils of ability from the poorer classes.

Secondary instruction, therefore, begins at eleven years of age in the sixth form of *lycées* and colleges, to which are admitted pupils from private schools, primary schools, preparatory departments of *lycées* and colleges, as well as pupils who, with a certain amount of state control, are permitted to begin their studies at home; and ends at the age of eighteen in the philosophy or in the mathematics form. The degree of Bachelor of Arts or Bachelor of Science is conferred after thorough preliminary and final oral and written examinations.

2. *Curriculum problems.* Léon Bérard, author of the reforms of 1923, was a member of the Chamber of Deputies when he was appointed minister of public instruction. As president of the commission on education of the Chamber of Deputies, he had studied the defects of secondary education based on the reforms of 1902, and as early as January, 1921, he made known his ideas on what he considered much needed reforms. At the January session of the *Conseil Supérieur de L'Instruction Publique*, he made clear the weaknesses of prevailing courses of study, his opinions on the real aims of secondary education, essentially cultural and not utilitarian, his opposition to premature options and early specialization, and his belief in the classics as indispensable disciplines for human intelligence. At the June session of the *Conseil Supérieur*, he outlined his project and presented for advice seven questions dealing with the existing cycles, a common course for the first four years inspired by ancient disciplines, the baccalaureate degree for graduates of classical courses only, a reduction of the number of class hours per week, and the secondary education of girls.

In many notable speeches at public ceremonies, before the *Conseil Supérieur*, before the two parliamentary commissions on

education, and before the Chamber of Deputies, the Minister of Public Instruction presented his ideas on the prevailing defects in the utilitarian reforms of 1902 as he saw them, namely, early specialization; premature options; confusion of primary and secondary studies; neglect of humanistic culture and the sciences; and the abandonment of the old system of class professors who taught Latin, Greek, and French. M. Bérard's emphasis on the memory-training and cultural classics brought up the "eternal controversy," and renewed the ancient quarrel between the classicists and the modernists.

The most important arguments of the modernists, opponents of the Bérard reforms, may be summed up as follows:

1. French, the native tongue, cannot be neglected in favor of the old classics. There is a French classicism perfectly complete and independent which is worthy of profound study.

2. Modern times are the result of decades and centuries of changes, and demand a corresponding reformation of the old processes of education. Classicists, bound to the ancient languages by educational tradition, are always blind to the necessity of practical revisions of programmes.

3. Modern languages cannot be brushed aside as inferior disciplines. They train the powers of discrimination, analysis, accurate reasoning, trustworthy observation, and retentive memorizing; they form the will and make men, since young men formed by the programmes of 1902 gave an example, on the battle fields and in the trenches, of will and intelligence unsurpassed.

4. The new reforms will create an *élite* of literary scholars, but an *élite* of leaders in industry, commerce, and agriculture is equally necessary.

5. Compulsory classic studies for all in state institutions will be the death knell of many colleges, the *clientèle* of which will be driven into inferior private institutions based apparently on modern utilitarian principles.

6. The classical humanities should be open to all students, but forcing all to take up Greco-Roman studies for four years means waste of time for the unwilling, who will be a source of annoyance to the others. Unquestionably the coerced students will drop their classical studies at the end of the obligatory period just when the studies are beginning to be worth while.

7. The new reforms will deter many students from professional

careers since the classics will be obligatory in the secondary schools through which they must pass in order to be admitted to the universities. Students must be permitted to work toward other goals, if they feel that a modern, scientific education is a national necessity.

8. To establish a long period of four years of classical studies for all secondary students, will be to found an undemocratic system whereby a wide gulf will be created between the youth of the *bourgeoisie* and the youth of the people.

On the other hand, the classicists, supporters of the Bérard reforms, set forth the following claims:

1. The new reforms will establish an equilibrium of literary culture and of scientific teaching, and at the same time, by a methodic selection, will call all pupils to participate, regardless of fortune or social distinction.

2. Secondary education should be liberal and cultural, without any utilitarian or vocational bias. Intellectual culture should not be subordinated to material progress or to economic necessity.

3. Common classical studies must come first because complete scientific culture can find a place only at a later stage of intellectual development.

4. Options and specialization at eleven years of age are dangerous. A period of common studies allows the formation of aptitudes and capacities and permits of more intelligent selection at the time pupils are called upon to make the crucial choice.

5. French civilization is Greco-Roman. The end of the humanities would be the end of French genius. The moral wealth, eternal youth, and living beauty of Roman and Hellenic culture have always enriched and completed French civilization.

6. The French language, which has its origin in the genius of ancient times, cannot be studied thoroughly without a classical introduction. The common period of classic studies will make the explanation of French authors easy. To understand Latin is the shortest method of acquiring ability to understand, speak, and write French. The classics are also the basis for other modern languages.

7. Studying the classics means forming habits of careful reflection, fine analysis, and measured reasoning.

After two years of discussions and deliberations, without warning or further consultation, M. Bérard sent the Reform Decree on May 3, 1923, to the President of the Republic for his ap-

proval and signature. M. Millerand signed the decree, and the Reform of 1923 became a law. The most important articles of the decree follow:

Article 1: Secondary Education comprises a unity of studies covering a period of seven years. It follows the course of elementary primary studies instituted by Article One of the law of March 28, 1882.

Article 2: All pupils will follow the same programme of studies during the first four years.

Independently of other studies in common, Latin is obligatory during the first four years (Sixth, Fifth, Fourth, and Third Forms) and Greek during the last two years (Fourth and Third Forms).

Article 3: In the Second and First Forms, pupils will have a choice between a Classical Course and a Modern Course.

In the Classical Course, Latin will be obligatory and Greek optional. . . . The hours assigned to the study of Greek will be devoted to French and the modern languages, by those who do not continue their Greek studies.

In the Modern Course, Latin and Greek are replaced by a more advanced study of French and a second modern language.

Article 4: From the Sixth Form to the end of the First Form, the science programmes and the hours assigned to science studies are the same for all students.

Article 5: The Philosophy Class and the Mathematics Class are open to all students who have completed the First Class irrespective of their selection of courses (Classical or Modern).

Article 6: The Baccalaureate Degrees are under the control of Secondary Education.

At the time of registration for the first part of the baccalaureate examinations, every candidate must furnish proof of having satisfactorily completed the common programme of classic studies, by showing that he has passed a special examination consisting of two written tests, one in Latin, the other in Greek. . . .

Article 9: The present decree will be in force on October 1, 1923, and will apply to those pupils who enter the Sixth form except in so far as certain conditions of admission are covered by Article Seven. . . .

Article 11: The decree of May 31, 1902, relative to the secondary school Course of Study is abrogated except in so far as it applies to the pupils who at the present time are pursuing studies in accordance with this decree.

The Reform Decree of 1923 is in force, but the "eternal controversy" is far from ended.⁴ The experience of France ought to be a notable lesson to American secondary education. Our classical Latin grammar schools of the colonial period yielded to the private academies of the eighteenth and nineteenth centuries, and these academies were in turn replaced by the public high schools of to-day. The controversy between classicists and modernists has often been a bitter one in the various phases of the development of secondary education in the United States. Nothing seems to indicate a cessation of "hostilities." The classicists for the time being have lost some of their ancient prestige, but they will undoubtedly return to the "combat."

Language selfishness and language jealousies must cease in order that we may be spared a renewal of wearisome language controversies. Political, economic, industrial, and social progress demand, from time to time corresponding revisions of studies, but American education must not be periodically revolutionized at the will of one-minded specialists. The writer is a special pleader for all foreign languages, ancient and modern, but not for foreign languages for all. He has little sympathy with the language specialist who spares no efforts to destroy a "rival" language in order to establish his own as a prescribed "master" study. There are pupils who ought to be encouraged to study the ancient languages; there are likewise pupils who ought not to be deterred from taking up modern literatures; there are others who ought never to be allowed to take up either. A modern secondary curriculum ought to be flexible enough to cover these three types. A modern system of varied selective offerings ought to leave the choice of languages to pupils and parents; schools have yet to devise effective means of deciding what pupils shall not pursue linguistic studies.

All foreign languages are an essential part of cultural disciplines. There are modern as well as ancient humanities. The languages and literatures of Greece and Rome bequeath to us ancient culture, precision of thought, and perfection of form;

⁴M. Bérard's successor, M. François-Albert, has already (1924) dropped the requirement in Latin and Greek. (W. L. U.)

modern languages and literatures trace for us the story of the creative thought that has controlled, in each modern national group, the progress of civilization toward the truth. Surely this general distinction between the two disciplines cannot account for their hostility. The humanities, ancient and modern, have their place side by side in a modern curriculum. Bitterness and discord within these fields should be replaced by complete understanding and coöperation. These studies have well-defined linguistic, disciplinary, vocational, social, and cultural aims and values. Sciences, mathematical, physical, political, or moral, are not *au fond* opposed to language studies. The real enemy of humanistic culture in the United States is a narrow, intolerant, patriotic chauvinism which sees no inspiration in foreign (ancient or modern) contributions to progress and to civilization. Let us beware of substitute "get-culture-quick" schemes. "New" culture is a menace.

THE JUNIOR HIGH SCHOOL IN EUROPEAN SYSTEMS^a

BY I. L. KANDEL

One of the anomalous features of the American system of education, organized though it may be for the democratic purpose of providing opportunities for all, is the absence of variety and elasticity. The elementary school retains its pupils up to the age of fourteen; without a flexible system of promotion each boy and girl is expected to pass through one grade in a year. Good, bad, or indifferent, few manage to reach the high school before the age of fourteen. For many pupils this system must mean mental retardation, since the progress is based on the speed of the average. The elementary school curriculum could probably be completed by many pupils at the age of twelve or thirteen.

The system has another inherent weakness. By postponing the age for beginning secondary education or, more generally, the time for differentiation, the American boys and girls at the age of eighteen or nineteen are at least two, if not more, years behind the European boys and girls in intellectual attainments.

In the accompanying study it is not intended to argue for the introduction of any foreign system. An attempt will be made to indicate what provisions are made for differentiation of the curriculum, the age at which these opportunities are offered, and the

^aThe *Educational Review*, LVIII, 303-327. November, 1919.

organization of courses to meet the needs of pupils who will necessarily leave school at the age of fifteen or sixteen. Finally, the movements, based partly on the American experiment in educational democracy, partly as a conscious desire to offer an all-round curriculum for pupils who cannot remain at school beyond their sixteenth birthday, will be considered as they are taking place in England and Germany.

German middle schools. The German school system is organized on a horizontal basis; the elementary and secondary schools form two separate compartments running parallel for a number of years. The boy who wishes to enjoy a secondary education must enter a secondary school at the age of nine or not much later. In Prussia the result is that hardly more than one boy in ten thousand passes on the completion of an elementary school to a secondary school. With this obvious fact in mind there is a tendency to neglect the intermediate or middle school, an institution whose appeal is to a social class a little lower than that which attends the secondary schools. It corresponds in general to the French and English Higher Elementary School.

Established originally under the *Allgemeine Bestimmungen* of 1872, the middle school was reorganized in 1910 on the following grounds:

"The development in the fields of handicrafts, art industries, commerce and industry demands an extended preparation of boys and girls for these occupations. In connection with this the need is becoming pronounced of a suitable preparation for several intermediate positions in the administrative services of the state and municipalities as well as in the larger industrial and business concerns.

"These demands the elementary school, however well developed, can meet only in a slight degree owing to the difficulties involved by its compulsory character. The aims of the higher school, on the other hand, are directed to intellectual ends, so that this school is also unable to meet the situation satisfactorily. Hence there arises the need of an institution intermediate between the elementary and the higher school which, while avoiding even the appearance of scholarly pursuits, adjusts the pupils to their environment and enables them to find themselves in their future careers. The middle school as provided under the decree of October 15, 1872, can no longer serve this end. The course of study is organized on a basis of six progressive classes, and its require-

ments do not pay sufficient attention to practical life—it can, accordingly, no longer satisfy the educational demands of the present. Where these are suitably recognized, the middle school has practically developed into an organization with nine classes, because only in this manner can it satisfy its legitimate task.

“The scope of this type of school is increased by the extension of school attendance by one year and the consequent greater maturity of the pupils. The significance of this year for the intellectual development as well as the moral training and strengthening of the youth cannot easily be exaggerated. The effectiveness of the extended school period is still further promoted by smaller classes, a greater wealth of teaching equipment and home environment generally more favorable for home studies.”⁶

The middle school is organized on a nine-year basis, the first three of which may be given in an ordinary elementary school. Pupils may thus be transferred to the middle school proper at the age of nine and are expected to remain until they reach the age of fifteen. Tuition fees are charged but are lower than in the secondary schools. In 1913 there were 62 such schools in Prussia.

The curriculum in these schools includes religion, German, history, geography, arithmetic with bookkeeping in the last year, nature study, writing, drawing, singing, handwork (gardening and domestic subjects), physical training and one foreign language (French or English), begun at the age of ten or eleven. A second language may be offered to pupils of ability with the approval of the local authorities. When this is permitted, the language is studied during the last three years of the course. Handwork is compulsory for boys and girls—gardening for both, housekeeping for girls. Maximum and minimum hours are assigned for languages, mathematics, nature study, and drawing; the remaining subjects may be organized to suit local needs or be given a commercial or industrial bias.

This type of school is not popular with teachers or with parents. The teachers of the elementary schools object that the middle school attracts the brighter pupils who cannot afford to attend a secondary school. The parents, on the other hand, feel that, if the children are retained in school until the age of fifteen, they should be granted the same privileges as pupils who attend the first six years of a secondary school up to the same age. As a

⁶ *Bestimmungen über die Neuordnungen des Mittelschulwesens*, Feb. 3, 1910.

concession the one-year military privilege is granted to boys who graduate from the middle school and in addition pass an examination which includes two foreign languages. Certain positions in the civil service also have been opened to pupils from these schools.

It may be objected that this type of school is a concession to the class spirit or that the trades and continuation schools afford a better training. The point to be noted, however, for American practise is the attempt to organize an institutional type that on the one hand is not elementary and on the other is not secondary, that is intended to give an all-round general course of a prevocational character to boys and girls who intend to enter the vocations in intermediate positions at about the age of fifteen. The course is not merely a broken morsel of a secondary course; it is not academic in intent; and it is not definitely vocational. It supplies a course for those whose schooling must close at the age of fifteen. The objection that the course begins at the age of nine while differentiation in this country would not begin before twelve is not valid. On closer examination it will probably be found that the elementary schools of this country offer in general as rich a curriculum as the middle schools with the exception of bookkeeping and the modern language and some introduction to the vocations. Bookkeeping is postponed to the last year; the modern language is taught for only four years. It would probably not be difficult to offer a similar type of work in a junior high school.

Secondary Education for Girls in Germany. The system of secondary education for girls was reorganized in Prussia in 1908 on the basis of a ten-year course beginning at the age of six. The first three years are elementary and preparatory. Secondary education proper begins at the age of nine and is continued up to the age of sixteen, when the majority of pupils leave school. Specialization in courses corresponding to the secondary schools for boys is provided, but is not pertinent here. With the exception that French is begun at the age of nine the first three years of the general course do not differ from that of good elementary schools in this country. The major part of the secondary work falls within the period from twelve to sixteen—the period corresponding broadly to the junior high school. In this period English is added and the time devoted to natural science is increased; the remainder of the curriculum includes religion, Ger-

man, history and art history, geography, arithmetic and mathematics, drawing, singing, gymnastics and needlework (optional), with the major amount of the time given to languages. Pupils who desire to specialize in the classical or semi-classical courses, which continue up to the age of nineteen, begin Latin at the age of thirteen; those who wish to emphasize foreign languages and sciences commence their specialization one year later and also continue up to nineteen.

Here again the point to which it is desired to draw attention is not the organization of a secondary school type, but of an educational opportunity that goes beyond the elementary school subjects, with the major part of the differentiation between the ages of twelve and sixteen. Those pupils who leave at the latter age have completed an all-round course; they do not merely drop out with a large number of straggling and unfinished subjects behind them. This secondary course may be used as the basis either of a general course of two years in practical arts for women, given in the Women's School (*Frauenschule*), or of a professional course for elementary school teachers of four years' duration (*Lehrerinnenseminar*). The other opportunities for specialization for the few who intend to prepare for the universities have been mentioned above. The essential contribution of the general secondary course is the recognition of the fact that most girls will leave school at the age of sixteen.

German "Reform Schools." The German reform schools (*Reformschulen*) of the Frankfort and Altona types are of considerable importance in any discussion of the reorganization of the American high school. While the latter represents a movement for earlier differentiation of educational opportunities, the former is an attempt to postpone the prevailing practise of imposing the choice of a career at the age of nine. Both movements practically coincide in making the age of twelve the crucial point.

Under the general secondary school system which includes the *Gymnasium*, *Realgymnasium*, *Oberrealschule*, and *Realschule*, a boy is compelled to make his choice of a school at the age of nine, and this choice practically prevents him from transferring to another type in case of failure. The reform plan involves the organization of a common basis for all the schools beginning at the age of nine. At this stage French is begun; the remainder of the curriculum for the first three years corresponds to that of an elementary school in this country. The time of differentia-

tion is postponed to the age of twelve, the period at which the junior high school would begin. At this time Latin or English is begun; sciences follow later in the course on a foundation of nature study. For the majority of pupils, no matter what type of course or school they have chosen, the goal is the one-year military service privilege. This is granted on the successful completion of six years in a secondary school. In the schools organized on the reform plan this means that the privilege may be obtained three years after the period of differentiation, or normally at the age of fifteen or sixteen. In other words the bulk of the secondary school work proper falls between the ages of twelve and fifteen—the junior high school period. Not only does the reform school postpone the date of final choice, but under a more democratic system it would facilitate the transfer of pupils from the elementary to the secondary school at the age of twelve. A discussion of the revived movement for the *Einheits-schule* will indicate the contribution made by the reform school to democracy in education. The *Einheitsschule* involves only the postponement of French to the age of twelve to throw secondary school opportunities open to all. Still one other contribution to educational thought made by the reform school must be mentioned. The experiment has proved that by better methods of instruction the attainments in Latin expected of a pupil from the *Gymnasium* at the close of nine years' study can be reached in six, while the six years' work in Greek in the *Gymnasium* is accomplished in four years. The same results are achieved with English; in the *Realgymnasium* this language is studied for six years, while only four years are required to cover the ground in the reform school of the same type.

Emphasis must again be placed not on the organization here discussed, but on the general principle. If a traditional and conservative system like that of Germany can make a successful experiment in affording a well-rounded course to pupils who leave school at the age of fifteen, and under the reform plan can give the bulk of this work in the last three years of the course, a reorganization of the American high school to begin at the age of twelve and offering a far better variety of opportunities suggested not only by sounder psychological principles, but also by the social needs of a democracy should be within easy reach of accomplishment.

The common school movement in Germany. The most recent

movement in German educational thought is the agitation for the *Einheitsschule*. This is a revival of a movement that had its rise in the revolutionary period of 1848, when it met the fate of all other liberal propaganda. It came to the surface again in 1870-71, but without effect. In its origin the proposal was to establish a uniform system on the foundation of a common elementary school, articulating at the age of twelve with the secondary schools. About 1885 the movement took another turn and was confined for a few years to a desire to reorganize the secondary schools on the plan of the cosmopolitan high school—a common foundation with differentiation at thirteen or fourteen. This plan was incorporated in the *Reformschule* which has already been considered.

The present movement, however, is a revival of the original idea—a common elementary foundation with differentiation at the age of twelve. The agitation is frankly to abolish the claims of caste and privilege and to throw open educational opportunities to all in order to repair the intellectual losses of the war. The only salvation for the future is to draw on the intellectual reserve of the people. Ability and talent must be encouraged wherever it is found, and every boy must find the place that is best suited to his needs and capacity. The future school must provide not an easy but an unobstructed road. The *Einheitsschule* must be established to afford the best opportunity for all to coöperate in promoting the great aims of the German culture state. The national unity aroused by the war must be made the basis of the educational reorganization of the future. To preserve the unity of party, class and sect all must sit upon the same school bench. The *Einheitsschule* implies a unified school system branching out into various school types when the needs for further culture and the demands of practical life appear.

The logical consequence of the establishment of the *Einheitsschule* would be the abolition of the preparatory schools (*Vorschulen*). The disappearance of this class-school would mean a saving in fees for three years, while pupils would not be compelled to select a secondary school until the age of twelve, at which time they would have exhibited some capacity or bent. The present system of an early choice of a secondary school type frequently leads to retardation in the middle classes of the secondary schools. Too many pupils who have no business to be there attend the secondary schools. If selection were postponed

to the age of twelve, there would be greater likelihood of a correct choice. The *Einheitsschule* implies a common foundation on the basis of a thorough education in the mother tongue. Such an institution would secure the basis of national and social unity and would satisfy the social and cultural demands of the laboring classes. True nationalism can only be fostered by a national system of education, which would absorb the laboring classes into the political and social system to renew the life of the nation. The aim of the *Einheitsschule*, however, should not be merely to enable a few individuals to reach the top, but to give each individual the opportunity of being placed in the position best suited to his ability without distinction of class.

Detailed plans of organization are not yet suggested, but tendencies may be surmised. The present types of secondary courses—literary, linguistic and scientific—would be retained, but the beginning of specialization would be postponed. In addition it is recommended that a three-year course based entirely on German should be offered, and that trade schools should be recognized as of secondary grade and should be permitted to lead to the privilege of the one-year military service.

The movement involves four principles: (1) The democratization of education; (2) the redefinition of the meaning of a liberal education; (3) the postponement of specialization in secondary school subjects to the age of twelve; and (4) the provision of differentiated courses, some for those who must leave at the age of fifteen, others for those who can complete a nine-year course or desire to continue to the universities. A summary of the movement is contained in the suggestion that the question for the artisan is not "How can I raise my son in the social scale through education?" but "How can I secure thorough education for my class, or rather the able men in it, suitable influence in the administration of the state and of the community, and in industry, commerce and transport, and how can I put an end to privileges that are socially detrimental?"

French higher elementary schools. Although the French secondary schools are practically closed to the pupils who are unable to afford the requisite tuition fees, other educational facilities are offered to them for enjoying an education reaching beyond the scope of the elementary schools. These are provided in the higher elementary schools (*écoles primaires supérieures*) organized originally in 1893 and reconstructed in 1909. In character these

institutions correspond almost exactly to the proposed junior high schools, perhaps more closely than any other foreign institution.

Boys and girls are admitted to the higher elementary school after completing the elementary school course and obtaining the certificate of primary studies for which they can present themselves at the age of twelve. The duration of the course in the higher elementary school is two or three years; always three years in a fully reorganized school. The three-year courses provide a common curriculum for all pupils in the first year and then differentiate into general, industrial, commercial and agricultural courses and household arts for girls. But these schools are not vocational. In the words of M. Gasquet, director of elementary education, "We do not aim to train apprentices or specialists ready for immediate employment in commerce and industry. The task of our schools is to help pupils to know themselves, to give them a taste for manual work, to make them familiar with the essential equipment of all occupations; then they should prepare them by a strict theoretical education which should never lose contact with the practical and after an indispensable period in an industrial (or commercial or agricultural) concern to become the progressive non-commissioned officers in industry, capable of adapting themselves to the diverse and ever-changing needs of manufacture." Opportunities are offered to those who complete the general course to transfer to the second cycle of a secondary school; this, together with an increasingly flexible curriculum in the secondary schools, is making for the greater democratization of higher education.

The subjects of instruction common to all pupils in all the courses are: Morals; civics; French language and literature; modern foreign languages; national history and outlines of general history; geography of France and the colonies, and a general outline of geography; practical arithmetic, speed in numbering, algebra and geometry; outlines of chemistry, physics and natural sciences; hygiene; writing; design and modeling; singing; gymnastics and military training (for boys).

The special interests cover: Outlines of political economy and every-day law; theory and practise of subjects relating to industry, commerce and agriculture such as mechanics, technology, industrial chemistry, industrial electricity, agriculture, agricultural chemistry, wares, transportation and customs; stenography and typewriting, accounting and bookkeeping; geometrical and artis-

tic design and modeling; workshop and laboratory practise, agriculture and horticulture for boys; and care of infants, household management, cooking, gardening, farming, care of linen, and dress-making for girls.

Fees are charged in these schools, many of which are boarding schools, but the state offers scholarships covering the board, or maintenance, or expenses of a lodging where there are no boarding facilities in the school. The scholarships are granted on a competitive examination, and the home conditions are also taken into consideration. Grants are also made for clothing. At the close of the course pupils who have graduated and are between the ages of sixteen and eighteen are eligible for traveling scholarships, granted on a competitive examination. The scholarships are offered to pupils who intend to pursue an industrial or a commercial career, to enable them to improve their command of a foreign language. The scholarships were ordinarily held in England or Germany, sometimes in Spain or Italy.

The completion of a course in a full higher elementary school is marked by an examination for the certificate of higher elementary studies. Candidates must have attained their fifteenth birthday on the last day of the year in which they present themselves for the examination. The examination is written, oral and practical. Five certificates are granted in the general, agricultural, industrial, commercial, and household arts courses. Graduates in the general course have the privilege of proceeding to a secondary school, where they may be admitted to the second cycle, while others enter the lower branches of the civil service.

French secondary school for boys. The French secondary schools (*lycées* and *collèges*) are limited to those pupils who can afford to pay the high fees. Ordinarily few pupils pass from the elementary to the secondary schools, and a small percentage are assisted by scholarships. The complete secondary course is organized on the basis of seven years, beginning at the age of eleven, the preparatory courses from the age of six up to eleven are elementary in character, with the exception that modern languages are begun and taught for three years before the secondary course proper commences. Since the time allotted to the subjects is small (2 week hours for three years), and since as a rule the subjects are poorly taught, this difference may practically be eliminated. The secondary course proper is begun usually at the age of eleven.

In order to provide flexibility the secondary course is divided into two cycles—one for four years and the other of three years. For purposes of the present study the first cycle only—taking pupils from the age of eleven to fifteen—is of interest. Two differentiated courses are offered in the first cycle—the Latin-modern language course and the modern language-scientific course. The common subjects of both courses are: French, ethics, modern languages, history and geography, arithmetic and mathematics, and natural science. The first course lays emphasis on Latin and Greek, which may be added in the third year; the second course stresses modern language and sciences.

At the close of the four years pupils who desire to continue in the secondary school have the further choice of four courses—classical, Latin-modern languages; Latin-science, science-modern language, pursued for two years, and followed by one year of specialization in the class of philosophy or mathematics. The significance of the division in two cycles, however, is that pupils who desire to leave on the completion of the first cycle may do so and may obtain on the basis of their record and the recommendation of their teachers a certificate of secondary studies of the first degree. Farrington sums up the significance of this opportunity of leaving at the age of fifteen, as follows:⁷ The close of the first cycle “forms a natural break just about midway of the course and rounds out a complete though elementary circle of intellectual achievement. If the pupil is compelled to drop out there he can do so without feeling that he is leaving a piece of work half done. He can carry away with him a definite unity of ideas. He has covered in cursory fashion the whole range of the national literature, paying considerable attention to the classic writers; he has studied from one to three foreign languages, according to the course he has selected, for from two to four or more years; he has completed elementary arithmetic, with perhaps some more advanced mathematics; he has been introduced to scientific lore; he has studied the geography of the whole world; he is familiar with the great movements of history from the very beginning down to 1889; and he has had two years of elementary moral instruction, introduced to supply the place of the former religious teaching; in other words, he has touched practically all the subjects of secondary school study.”

The emphasis must here be placed not so much on the differen-

⁷ Monroe: *Principles of Secondary Education*, p. 79.

tiation of courses, for since they are mainly literary they cannot serve as a model for American practise, but on the definite recognition that a considerable percentage of pupils do drop out from the secondary schools around the age of fifteen. It is mainly with these in view that the seven-year course was in 1902 divided into two well-marked courses, offering those who desired to leave the opportunity of completing a definite course, and to others the opportunity of specializing in the second cycle. This practise obviates the patent evil of English and American secondary school systems in which pupils leave when and where they please without anything but a mass of uncoördinated, unrelated and undigested subjects rather than on the completion of a well-marked and rounded-out stage in the secondary school career.

French secondary education of girls. The system of secondary education of girls in France bears a closer resemblance to the desired organization of the junior high school than the system for boys. But like the boys' secondary system the secondary girls' schools (*lycées* and *collèges*) are also divided into two cycles. Secondary education for girls begins a year later than for boys, that is, at the age of twelve. A preparatory course of four years, beginning at the age of eight, is offered and includes two and a half week hours of modern languages. Otherwise the preparatory course is elementary in character and includes French, history and geography, arithmetic, nature study and drawing. Secondary education proper begins at the age of twelve and lasts five years, divided into two cycles of three and two years. The majority of the girls leave school on completing the first cycle at the age of fifteen. The certificate of secondary studies may be obtained at the end of this course, representing the completion of a definitely rounded-out general cultural course. The program of studies covers the following subjects: Ethics, French language and literature, modern language, history and geography, mathematics, natural history, physics and chemistry, domestic economy and hygiene, sewing, drawing, singing and gymnastics.

The second cycle of two years includes the following required subjects: Ethics, psychology applied to ethics and education, French language and literature, ancient literature in translation, modern foreign literature in translation, modern languages, history, geography, mathematics, common law, physics and chemistry, animal and vegetable anatomy, and physiology and hygiene. In addition, the following optional subjects are offered: Mathe-

matics, additional modern language, sewing, drawing and singing, and gymnastics.

Intermediate education in England. Within the past few years a new type of school, offering a course beyond that of the elementary schools to pupils who cannot remain at school beyond the age of fifteen, has been established since 1911 in London, Manchester, and other cities. This is an attempt to supersede the higher elementary schools for which the Board of Education prescribed an inelastic curriculum that could not be adapted to local needs. The London County Council in establishing the central schools declared their object to be the provision for the boy or girl of "the best possible equipment for entering upon the industrial and commercial world as soon as he leaves school which at the same time qualifies him to enter upon a special course of training for some particular industry at a polytechnic or similar institution if he desires to continue his education further."

Elasticity and adaptation to local needs are the guiding principles in the organization of the central school, and the school principals enjoy considerable freedom in framing the curriculum of their schools. The pupils for the central schools are selected by competitive examination between the ages of eleven and twelve. In ability these pupils come next to those who are successful in obtaining scholarships to secondary schools. Each central school draws upon about 18 to 20 contributory schools. The complaint is, of course, met that the elementary schools are denuded of pupils of ability, without recognizing that these pupils deserve every possible opportunity for educational advancement.

The central schools are organized with a commercial or an industrial bias, or both. Generally the nature of the bias is determined by the character of the district in which the school is situated. Where a school is organized on both commercial and industrial lines, the wishes of the parents, and, if possible, the bent of the pupils, are considered in determining the choice of a course. In some cases the determining factor is the accommodation of the school. Of the two courses, the commercial, probably because the requirements are more obvious and because a tradition has already been established, is the more definite and objective. The industrial courses, for boys at any rate, are more generalized and aim at training in alertness and initiative rather than special training for any particular occupation. And, indeed, special preparation in an area like London, where the industries

are gradually moving away, would offer a problem of unsurmountable difficulty, even if it were desirable. As a matter of fact many boys who have passed through an industrial course, enter warehouses and offices. This problem is not surrounded with such difficulties in the case of girls' schools, for here the industrial courses combine preparation for the home with general training in needlework and dressmaking.

The commercial courses in schools or departments with a commercial bias are so framed that scholars are able to enter business houses without any further preparation. The minimum requirements as laid down in the *Elementary Schools Handbook* of the London County Council are as follows:

(1) At least four hours a week must be given to a modern language during the whole of the four years' course.

(2) Not less than two hours a week must be given to laboratory work in experimental science during the first and second years of the course, and, if thought desirable, this instruction may be continued during the third and fourth years.

(3) At least two hours a week must be given to drawing, including scale drawing throughout the whole of the course.

(4) In the case of boys, one session a week must be given to handicraft during the first and second years.

(5) In the case of girls, one session a week must be given to domestic economy during the first three years of the course, but its continuance in the fourth year is optional.

(6) Not less than one and a half hours a week must be given to shorthand as an optional subject in the third and fourth years.

(7) Not less than one hour a week must be given to the principles of bookkeeping during the third and fourth years as an optional subject.

(8) Where there is sufficient demand, an optional out-of-school class in typewriting must be held for one hour a day . . . to be attended only by third and fourth year pupils.

In addition to the above, the ordinary school subjects—Scripture, English, history, geography, mathematics, singing, and physical exercises—are also included. Where both commercial and industrial courses are offered in the same school, the curriculum, with the exception of the modern language, is the same for both groups in the first two years, the bifurcation taking place at the beginning of the third year.

It would be impossible to enter into details of the curriculum, for the standard is found to vary from school to school, and for

comparative purposes an outline will be of greater service. As compared with the ordinary elementary schools, it may be said in general that the curriculum of the central schools, in spite of the additional subjects, is richer in content, and since the classes are smaller, a certain improvement in the methods of instruction can be observed. Training in initiative and in habits of independent working and thinking is more successful. The teachers are free from the bad practice of lecturing, while the pupils show greater ability to work by themselves. It is not forgotten that the pupils of the central schools are selected, nor that as a rule the teachers have higher qualifications (although poor teachers are to be found here too), but it is a fact that here are schools which are attempting to realize the standards of the newer pedagogy. Let it, however, not be inferred that the curriculum is beyond criticism or that the methods of instruction are always unimpeachable. There are schools the head teachers of which feel that the old practise of working for examinations according to the scheme of some outside examining body cannot be improved upon, or who hold that a broad, general preparation for the career of the office or the home does not possess educational elements.

In those schools or departments which have been organized with an industrial bias the object is perhaps somewhat less well defined than where the commercial bias has been adopted. Here it is clearly impossible to provide the special preparation of the type given in a trade school or polytechnic. The aim, as it is indicated by the headmaster of the Monnow Road school for boys and indorsed by other headmasters, is "to produce an intelligent and alert boy, accurate and skilful of hand, capable of continuous effort, and less book taught." The curriculum is accordingly organized to train industrial intelligence rather than to impart vocational skill. The aim in the girls' schools with an industrial bias is somewhat more specific, and, besides affording a preparation for the home, enables the pupils to secure employment in dressmaking, needlework, and millinery establishments.

The minimum requirements for central schools with an industrial bias or a department with such a bias are as follows:

(i) Not less than 10 and not more than 12 hours per week must be given to practical work during the whole of the four years' course. The practical work in the case of boys shall consist of science (including mensuration), drawing, clay-modeling, wood and metal work, and, in special circumstances, leather work and printing or other approved subjects; and in the case of girls it

shall consist of elementary science, domestic economy, drawing, practical needlework, or other approved subjects.

(ii) Instruction in a modern foreign language may, in special circumstances, be given, but the minimum of three hours a week to be devoted to instruction in the subject . . . must be observed.

Work of similar character is being done in other cities. A study of the elementary schools of England carries the conviction that the majority of pupils after the age of twelve profit by some differentiation of courses suited to their needs and abilities. The Act of 1918 provides both for the establishment of advanced instruction for pupils who remain in the last two grades of elementary schools and for the extensive organization of central schools. As things are at present the child of wealthy parents, no matter what his intellectual capacity may be, is admitted to the secondary schools, where he fritters away his own time and in most cases public money as well, while a large percentage of less fortunate boys and girls drop out of the elementary schools without any life preparation whatever. Under a more democratic system the central schools would be classed with secondary schools. Many of the central schools, because the principals are conscious of a definite purpose, are far more alert than the traditional secondary schools. The central schools are conscious of this aim—the completion of an all-round four-year course; the secondary schools merely display a variegated program of courses and are not much concerned either with the number of pupils that complete the course of their choice nor with the time consumed in the process.

English secondary education. The situation in England with reference to the adequate education of boys and girls who can remain in school only up to the age of fifteen is almost the same as in this country, with the exception that pupils of ability may complete the elementary course and obtain scholarships at about the age of twelve, which take them to the secondary schools. These schools, however, are not organized with the intention of meeting the needs of the pupils under consideration. In general, their aim is to prepare boys and girls for the universities or at any rate for the entrance examinations to the universities. They are, in other words, not self-contained; their aim lies outside of and beyond the secondary schools. A few schools attempt to provide specialized courses in commerce and technical

subjects, but these provisions are inadequate, and will be met by an increase of junior and senior technical and commercial schools, articulated ultimately with the university courses in these special branches. The basis of organization is literary; pupils may begin to specialize either in classics or modern languages, and in some schools in science.

The majority of pupils leave at least two years before completing the course offered by the schools. They have a smattering of a number of subjects without any definite command of a single one. It is obvious that with conditions as they are the situation should be faced and a general all-round and purposeful training should be given to suit the needs of those who must leave at about the age of sixteen. The Board of Education requires that a secondary school to be recognized for purposes of the state grant "must offer to its pupils a progressive course of general education . . . of a kind and amount suitable for pupils of an age range as wide as from 12 to 17." The curriculum of such schools must provide instruction in the English language and literature, at least one foreign language, geography, history, mathematics, science and drawing, with organized games, physical exercises, manual instruction and singing. Girls' schools must provide for practical instruction in needlework, cookery, laundry work, housekeeping and household hygiene. It must be noted that the Board simply considers secondary education in terms of subjects taught rather than in terms of purpose suited to the needs of the pupils. It implies that pupils while they are at school shall take some or all of these subjects but provides no machinery for the organization of courses adapted to the conditions mentioned above. The schools exist for the benefit of the few who will continue to the end and probably pass on to the universities.

With reference to the proper age for differentiation it is significant that the tendency is to encourage the transfer of the more gifted pupils from the elementary to the secondary schools between the ages of eleven and twelve. In the case of fee-paying pupils the practise has grown up of discouraging late entrance into secondary schools by increasing the fees with age. Scholarships are as a rule offered to pupils between the ages of eleven and thirteen. Some education authorities add a percentage of marks for each month that a candidate is below the maximum age limit in order to discourage late entrance and incidentally depriving those who develop late of their due opportunities.

The reform of secondary education in England. The most significant movement for the reform of English education after the war centers around secondary education. At present the elementary and secondary school systems overlap, but the transfer from the one to the other is encouraged by means of scholarships and free tuition. The secondary schools, however, are not organized in such a way as to meet the needs of the majority of the pupils in attendance, with the result that they fail to hold them until the end of the courses provided. The new movement, as voiced in the *Times Educational Supplement* since 1915, demands a reorganization of the whole school system with elementary or preparatory education up to the age of eleven or twelve, and free universal education thereafter. The second part of this proposal involves the reconstruction of the secondary system so as to meet the requirements of the large number of pupils who can only remain at school until the age of fifteen or sixteen, and a revision of the meaning of liberal education. Side by side with these radical proposals must be placed the recommendations of a number of conservative bodies, which, while not advocating universal secondary education, are thinking of it in terms of the pupils who will leave at the age of sixteen.

The campaign was begun by the *Times Educational Supplement* in September, 1915. The arguments for reconstruction were that the elementary and secondary schools overlap, and economy demands dovetailing. The work of the elementary schools is good up to about the age of eleven; this should become the preparatory stage from which pupils should move forward to an intermediate school for a minimum of four years. "It is in the training of children between the ages of eleven and fourteen that the elementary schools so largely fail. It is not the fault of the schools or the teachers. The teachers have never been trained to give intermediate or secondary training, and the result is that to the children between the ages in question there is given what Sir Joshua Fitch called a *cul de sac* education, something that leads nowhere. . . . We must have intermediate schools for all, provided with teachers specially trained for intermediate or secondary schools teaching."

Returning to the subject in October, 1915, the *Times* amplifies this statement, "There are nearly half a million children between the ages of twelve and fourteen who are receiving no education or no education worth having. Some of these are at school,

but all are at work, work leading nowhither, at an age when moral and physical development are at stake. . . . In our view the problem of the elimination of human waste and the multiplication of human efficiency can only be secured by a universal system of secondary education. . . . There should be, as there is to-day, preparatory education up to the age of eleven years . . . and from that age onward there should be in every school in the land compulsory secondary education for every child given by teachers who have received a secondary training, and, in ever-increasing numbers, a university training. . . . The primary school has failed lamentably in its dealing with children between the ages of eleven and fourteen; and it has failed because of the inherent defects of the primary ideal."

The article then proceeds to point out the distinction between elementary and secondary education from the point of view of aim and content. "Elementary teaching cannot give an outfit for life. It is in its nature preparatory; and when it ceases to be preparatory it merely supplies uncorrelated knowledge and an education leading nowhither. On the other hand, secondary teaching has as its goal the power of reasoning about acquired knowledge and thus securing self-realization. The primary ideal is the heaping up of knowledge as an external property or possession; the secondary ideal is the assimilation of knowledge as part of the personality. The latter ideal gives an outfit for life, a wise, thoughtful, and productive people; the former gives us what we have got—a nation with two million children running to waste."

As described in the December issue the course of this intermediate school should be general in character, but suited to the different abilities of the pupils. Specialization is only to be provided for on the completion of this course. "We claim that when once the child has had a thorough preparatory training—such a training up to the age of eleven as he has now—he shall have for four years a liberal training in a school that uses hand as well as brain for the acquisition of knowledge of himself and the world, and that then there shall at the age of fifteen be not merely bifurcation, but branchings off in such directions as the experience of a skilled teacher during four years shows to be the direction for this or that child—for one group continued school life with special training in humanities, or in higher mathematics, or in applied science; for another, apprentice work in industrial or agricultural, or mercantile life, but with some hold still retained, some claim

still, on the child's daylight time till the seventeenth year is reached, if it be but two mornings or afternoons in the week." The reference at the close is to the parallel movement for the establishment of compulsory day continuation schools for all who are not attending school between the ages of fourteen and eighteen.

Briefly analyzed this education revolution advocated by the *Times* contemplates the reconstruction of the century-old secondary school systems in the interests of individual and national welfare. It involves a revision of the educational possibilities between the ages of eleven and fifteen; it provides for an education more appropriate than the present as an outfit for life; and, finally, it requires the employment of teachers with wider and broader training. The scheme aims to give the pupil not merely a better preparation for life, but one more suited to his own needs and abilities. At the same time the new school will not be cut off in a watertight compartment; it will be built up on the foundation of the elementary school and itself will form the starting-point for further specialized education. The pupil who will be compelled to leave at the age of fifteen or sixteen will feel that he has completed one course, but properly organized such a course should prompt him to seek for further training.

It is difficult at present to discover to what extent the suggestions of the *Times* have met with approval. A large number of educational bodies have considered the reconstruction of English education. Not one of these, however, appears to accept the recommendations of the *Times*, *in toto*, although a number welcome the provision of free secondary education. There is unanimous agreement that secondary education should begin at eleven or twelve and offer a general course of four years without specialization. This reorganization was advocated among others by the Long Teachers' Association, and the Workers' Education Association, the Headmasters' Association and the Education Reform Council, of which Sir Michael Sadler and Professor Gilbert Murray were members. These associations represent the interests of the elementary and secondary profession, and of labor. There is general agreement that the minimum essentials of a four-year secondary course should cover English, history, geography, one foreign language, mathematics, science, drawing, music, hand-work and physical training. This plan does not provide adequately for the differentiation that is desirable in such a four-year course, but it is an advance on the present system which

neglects to take actual conditions into consideration. The Education Reform Council, without entering into any details, contemplated the organization of middle departments in the elementary system for pupils from the ages of eleven to about fifteen to be linked up with a system of compulsory continuation schools requiring attendance up to the age of seventeen. The National Union of Teachers, representing about 100,000 teachers mainly in elementary schools, recognizes that there is a demand for a higher type of instruction than that of the elementary school for pupils who can stay up to fifteen. This demand should be met either by an improvement in the upper departments of the elementary schools or by other schools of varying type. The Union considers it undesirable to specialize in the direction of a particular trade before the age of fourteen; such special training should be given in a trade school or in connection with workshops. The schools here under consideration should be for instruction of a general character with a special bias in the direction of industry or commerce and providing a broad equipment for life.

The recent administrative regulations of the Board of Education recognize twelve as the suitable age for beginning secondary school work; the first four years are general in character and culminate at sixteen in an examination, success in which may admit a candidate to the universities; this period is to be followed by specialization for two years in "advanced courses"—classics, modern languages, or science and mathematics—concluding with a second examination at about the age of eighteen.

Whatever the outcome of the proposals for reform may be, the principles underlying them all are: (1) That educational differentiation for most pupils shall not begin before the age of eleven or twelve; (2) that at present the last years of the elementary school are wasteful; (3) that for the majority of pupils of secondary school age a course or choice of courses covering four years should be provided; (4) that such course shall be general and not vocational in character; (5) that they should be planned to meet the needs of pupils who will leave school at the age of fifteen or sixteen; and (6) that intensive specialization should not be begun until after this period.

ENGLISH SCHOOLS · THE EXPANSION OF SECONDARY EDUCATION IN ENGLAND⁸

BY J. L. PATON

The backwardness of England in secondary education was clearly illustrated by Lord Bryce's Commission. No exact figures were available at that time. That fact in itself was a proof of our lack of system in this, the most important branch of national progress. But it was abundantly clear that the proportion of boys and girls receiving secondary education in England was painfully inadequate when compared with the number in any other European country that could claim to be progressive. The contrast was quite as marked, whether one took Germany and Switzerland on one hand, or Denmark and Norway on the other. The figures of Wales, and still more of Scotland, were a silent rebuke to our backwardness. The wealthiest country in Europe was among the most backward to spend on the higher education of its boys and girls. That was the indictment. Our plea was "guilty." There were no extenuating circumstances.

There were men and women ready to argue that the lack of supply was due to lack of demand. Now it is always fallacious to argue from bales of cotton to human souls. Commercial law does not necessarily hold for the spiritual world, and as a matter of fact, in the history of education, supply has always preceded and evoked and fostered the demand. That this is true also for our own country has been amply demonstrated since the beginning of the present century. 1902 saw the first attempt to put within the reach of every home the opportunity for secondary education. The supply at once evoked the demand; the demand grew and grew so fast that supply has never succeeded in catching up with it. Even in war time, with a clamant demand for juvenile labor, and a scale of remuneration which is out of all proportion to what was in vogue before, with boys and girls under 16 able to command a wage of 35s. per week—even under these conditions, the number in our secondary schools has steadily grown, the figures for 1915-16 showing an increase of over 6 per cent. That rate of increase would certainly be higher if the schools were able to accommodate the pupils who present themselves for entrance, but with the war all building has been stopped, and a good many

⁸ The *W. E. A. Education Yearbook*, 174-177. Ginn and Company, 1918.

schools in big towns have been dispossessed of their premises. The consequence is that at the present moment the supply is definitely inadequate to the demand, and many boys and girls are being excluded from the advantages of higher education, whose parents are willing to pay for it. Not only so, but the buildings are overcrowded, and the classes are becoming unwieldily large, also owing to the men of military age being called up, the teachers in day schools are predominantly feminine.

In laying plans for the expansion of secondary education, we are therefore working along the line of spontaneous growth. What happened in Scotland many years ago, what happened in Wales at the end of last century, is happening in England now. At last she has caught the contagion, and is awake to the fact that she must take the flood on the rise or the rest of her national life will be bound in shallows and in miseries.

What do these lines of growth appear to be?

It is to be noted that it is the day school, and not the boarding school, that is growing. This is a sign of health. Only the day school can cover the ground and meet the national need. The day school is the only way of opening up education to those social strata of our population with whom the hope of the future resides—the better-paid artisans, the worse-paid professional classes, and that increasing proportion of the population which works under the management of large joint-stock concerns. But Nature does not confine ability to any social stratum, and wherever nature provides the brains, it is for the nation to provide the training—the best training of which those brains are capable. The best brain in the Army, the brain on which the whole well-being of Our Army depends, was born in a charwoman's home. First and foremost, then, an enlightened national policy means that we must open up the way for the lad of parts, and equally for the girl of parts, to climb to the highest positions which they are capable of filling, and to render the highest service they are capable of rendering not only in our Government administration, but also in the universities, in commerce, in industry, and in the professions.

Not only so, but the whole level of our national education must be raised. Social progress is not the progress of select individuals here and there; it is the progress of the whole body politic. The gifted few must find their chance, but the ungifted many must not be shut out from the kingdom of light, the treasure house of

knowledge and all the things that are more excellent. Until that is done, our democratic government remains democratic only in name, and the basis of our democratic government is insecure because it is unenlightened. The lines of our advance must be determined mainly by our national needs. These are only too plain at the present time.

1. Our land produces, on the mildest computation, only half the foodstuffs which it should produce. Many causes, legislative and economic, contribute to this, with which we have not now to deal, but the chief cause is, after all, educational. Land cultivation needs not only the sweat of the brow but sweat of the brain. The allotment which the cultivator must assiduously till is the allotment that lies within the walls of his own skull. The educational curriculum of the country school must be related vitally to the science of the garden, the field, and the hedgerow, with which the pupil is daily familiar. It must train his hand to execute the purpose or the invention of his mind. It must open up the way without let or hindrance for the pupil who has brains to learn all that the best agricultural science has to teach him about the management of cattle and crops.

Owing to the scattered nature of the population, this will inevitably mean hostels with free board and tuition in connection with well-placed and well-equipped secondary schools.

The town boy who has aptitude for the land must not be forgotten, and urban authorities which provide all manner of technical and university scholarships must not forget to provide for the higher education of the boy or girl whose bent is agricultural.

In this sphere one may almost say that everything has yet to be done. The yield of the ground in Belgium is five times per acre what it is in England. In Germany, where the soil is far poorer, the yield is twice as great. In other countries the annual yield shows increase; in England it shows shrinkage. There is a much-quoted saying which cries blessing on the head of him who makes two blades of grass grow where one grew before. The saying is foolish. Men and women cannot live on grass. Not grass but corn must be the *leitmotif*.

2. The second need is industrial. The war has opened the eyes of the nation as never before to the weaknesses of our industrial position. It has made us see how America, Germany, Austria, and Switzerland, by the study of electricity and applied science in all its branches, have been able to wrest from us whole prov-

inces of production, even when the invention which made these new productions possible was of English origin. What has always been clear to a few is now patent to all, viz., that without a higher standard and a wider range or scientific knowledge our nation stands to lose not only its industrial position, but even its power of self-defence. In this matter we have been too eager for immediate results. We have not taken the long view. We have acted individually when we should have coöperated in our several trades. We have been blind to the industrial value of science.

Our new system must provide for a far closer association between our universities and the work of our staple industries. This implies, in the first place, a less donnish attitude on the part of dons, and appreciation on the part of the manufacturer of the value of that theoretical study of science which hitherto he has set down as academic and unpractical. It will not be a case of quick returns. The call is for prolonged study, concentration, patient endeavor, and a fixing of the eye on distant consequences; in a word, what Benjamin Kidd calls "projected efficiency."

The call is, further, for a new spirit of coördination and coöperation on the part of manufacturers and traders of all kinds. Hitherto, competition has been between firm and firm; in the future competition will be between nation and nation, and the nation whose forces are not marshaled and organized will go under. This spirit of coöperation, which is needed as much in agriculture as in industry and commerce, is, like the power of waiting for distant results, a moral quality. And for these moral qualities the school must prepare; in all school societies a healthy corporate spirit is as much needed for national efficiency as sound and strenuous intellectual work.

3. It is, therefore, clear that there must be not only secondary education for the man who is to take up higher directive work, but there must be a higher standard of civic education and intelligence on the part of all the workers in the different trades. The Junior Technical Schools, though few in number, show clearly on what lines progress can be made. Secondary education must not be exclusively bookish; many an English lad is intelligent without being intellectual, just as many are intellectual without being intelligent. At present we put perhaps too much premium on the boy who is intellectual. A secondary curriculum which shall be focussed on practical constructive work, and get its problems for thinking out of the needs of practical occupation, has yet to be

thought out. There is no doubt that it will appeal very strongly to a large proportion of English boyhood who have the instinct for things but do not respond to the appeal of words and literary form. American experience shows us how such a scheme of practical secondary education can be infused with a generous and inspiring interest in poetry and literature.

4. For many years the nation has felt that her secondary education was not as effective as it might be for the purposes of commercial efficiency. Its dissatisfaction has not been very articulate, and to meet it there has grown up a type of "commercial education" which has brought deserved discredit on the term. Short-hand, typewriting, long-tots and cross-tots may be necessary, but they do not call into play the higher activities of the mind. Many of these processes of drudgery will before long be replaced by mechanical contrivance. What we need is a new type of school which shall teach languages as living things, with practical application from the first to the needs of everyday existence, which shall develop in connection with geography the study of products and trade routes, and in connection with history the study of economic law, and so lead on to the intelligent study of economic science as a whole. In this connection it is relevant to point out that in all our universities, and especially in our ancient universities, the study of modern languages lags far behind every other faculty. It is safe to say that at the present time there is next to no organic connection between the highest modern language work in our secondary schools and the universities. This lack of upward development has reacted most prejudicially upon the development of modern language teaching in the schools.

Nothing has been said so far about what are called the learned professions. The reason is that there is no evidence of serious national deficiency in connection with these professions except in the profession of teaching. Indeed, it is evident that a large number of unemployed barristers might have found a much more useful employment of their gifts on the lines of national industry and commerce. But it must not be forgotten that the learned professions, being scientific, must necessarily also be progressive, and in developing on the lines indicated we cannot afford to weaken the provision for these professions or for the higher branches of our civil service. Whether the Civil Service in its lower branches is not absorbing an undue proportion of high-class intellect, and finding for it employment which is by no means

commensurate with its intellectual quality, is a question well worthy of consideration by the directors of our national educational policy.

Clearly the position calls for strong handling and a mind that shall be not only synoptic but able to plan on a big comprehensive scale for the future. It must provide machinery which shall not be static but ready equipped for progress in any required direction, which shall not be centralized and bureaucratic, but in touch with local needs, appealing to local patriotism, and adapted to local needs. Above all, our national system must not be laid down in rigid horizontal strata; it must provide for upward mobility on every line, and in order to secure that there shall be no waste of that most precious of all material—human souls, it must exercise educational control and guidance over every boy and girl up to the age of 18. And the need is immediate.

Principles of secondary education derived from foreign policies and practices. Varying conditions in different countries may necessitate the maintenance of different types of schools within different countries.

Educational organization reflects social organization. Education might properly assume a more aggressive leadership.

The secondary school of the future must provide an "unobstructed road" for the encouragement of talent wherever it is found. That is, the needs of national progress require that secondary education be provided for social and economic groups to which secondary education has heretofore been closed.

In order to make secondary education actually available to more population groups, the content, methods of teaching, and character of school administration must be adapted to meet new needs.

There should be differentiation with reference to the ages at which pupils leave schools. It is desirable to organize secondary education into cycles so as to accommodate better the large number of students who throughout the present generation will continue to leave the full-time school at about fifteen years of age. That is, secondary education should be so organized as to prepare not only

for higher training but also so as to lead to self-realization. As the elementary school provides training for further schooling, so the secondary school should provide for both further schooling and life in general.

Practical secondary education can be infused with a generous and inspiring interest in the cultural aspects of life.

The desirability of the early beginning of secondary education is an established principle. The junior high school features which have characterized foreign secondary education for centuries are being continued. The age of nine has been found to be too young for educational guidance. Intensive specialization should be postponed until at least the age of fifteen.

The possibility of crossing from one curriculum to another should be provided during the earlier years of secondary education by means of carefully organized curricula arranged in two- or three-year cycles.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Compare the uses of the term *secondary education* in Germany, France, England, and the United States.
2. Compare as to courses offered the different types of Gymnasien as a whole with courses offered in American cosmopolitan high schools.
3. How do you account for the rapid development of folk high schools in Germany?
4. Inasmuch as the United States has difficulty in maintaining the requirements of teachers as set forth in Chapter V, why is it possible for Germany and France to require such amounts of training as they do of prospective teachers?
5. What are the salient features of German and French secondary education?
6. Prepare a brief of Kandel's article on the junior high school in European schools.
7. Compare the foreign school systems with ours as to agreement with the gradual development theory.
8. How do you account for the separation of the sexes in foreign secondary schools?
9. What is meant by the "Reform School" movement in Germany? Discuss its significance.

10. Educational systems in general reflect the social and political conditions of a nation. Discuss this statement with reference to foreign secondary school systems.

11. To what extent and in what subjects do we have a "cycle" system comparable with that of France?

12. In what respects is an English public school *not* a public school in our sense of the term?

13. What significant changes are taking place in the secondary education of each of the three countries discussed in this chapter?

14. What American secondary school practices might profitably be adopted by Germany? By France? By England?

15. What practices of foreign secondary schools might profitably be adopted by America?

16. Test thoroughly the principles set forth at the end of this chapter.

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PART V

THE REORGANIZATION MOVEMENT IN SECONDARY EDUCATION

CHAPTER XII

ECONOMY OF TIME IN EDUCATION

The drive for economy. During the last quarter of the nineteenth century, a group of progressive schoolmen began a concerted drive for economy of time in education. In the course of that drive for economy all the administrative units of training were examined—the elementary school, the high school, and the college. Likewise, the content and technique of teaching each elementary and high school subject were scrutinized in a search for possible economies. Although certain persons doubt the advisability of reducing the total time required for completing one's training for professional and technical vocations, no one questions the advisability of developing efficiently the types of skill and the new purposes which are to be acquired for such vocations, and for life in general. Therefore, the movement for economy has not lacked support.

The readings in this chapter indicate (1) the main currents followed in the early discussions of economy of time, (2) the specific proposals for economy as made by the national committee, (3) typical experiments in economizing time, (4) the use of tests as a special device in adjusting classroom work to pupils' needs, and (5) the social issues involved in the adaptation of educational procedure to the needs of a certain group of pupils.

CAN SCHOOL PROGRAMMES BE SHORTENED AND ENRICHED?¹

BY CHARLES W. ELIOT

In the process of improving the secondary schools, colleges, and professional schools of the United States—a process which has been carried on with remarkable energy since the Civil War—certain new difficulties have been created for the higher education in general, and particularly for colleges. These difficulties have to do with the age at which young men can get prepared for college, and therefore with the ages at which boys pass the successive stages of their earlier education. The average age of admission to Harvard College has been rising for sixty years past, and has now reached the extravagant limit of eighteen years and ten months. Harvard College is not at all peculiar in this respect; indeed, many of the country colleges find their young men older still at entrance. The average college graduate is undoubtedly nearly twenty-three years old at graduation; and when he has obtained his A. B. he must nowadays allow at least three years for his professional education.

In respect to the length of time required for a satisfactory professional training, there has been a great change since the War. Twenty years ago the period of residence at Harvard University for the degree of Bachelor of Laws was eighteen months; now it is three years. Many of the States of the American Union have passed laws which practically make three years the normal period of study before admission to the bar. Ambitious medical students are giving four years to their medical training. Twenty years ago the leading colleges were satisfied to take men just graduated in arts as tutors in Latin, Greek, and mathematics. Now they expect a candidate for a tutorship or instructorship to have devoted two or three years of study after taking his bachelor's degree. School boards and trustees have become correspondingly exacting. In short, professional education in the United States is becoming constantly more thorough and elaborate, and is therefore demanding of aspirants to the professions more and more time. The average college graduate who fits himself well for any one of the learned professions, including teaching, can hardly begin to support himself before he is twenty-seven years old.

¹ *Educational Reform*. The Century Company, 1898. Pp. 151-154 and 162-170.

This condition of things is so unreasonable in a new country like the United States—being hardly matched in the oldest and most densely peopled countries of Europe—that some remedy is urgently demanded; and the first partial remedy that suggests itself is to reduce the average age of admission to college to eighteen. This reduction would save about a year. In effecting this saving of time, it is greatly to be wished that no reduction should be made in the attainments which the average candidate for admission now brings to the American colleges; for it is probable that the saving thus effected will not be sufficient in itself, and that the public interests will require in addition some shortening of the ordinary college course of four years. College men, therefore, are anxiously looking to see if the American school courses can be both shortened and enriched—shortened, so that our boys may come to college at eighteen instead of nineteen, and enriched, in order that they may bring to college at eighteen more than they now bring at nineteen, so that the standard of the A.B. may not be lowered.

The anxiety with which men charged with the conduct of college education look at this question is increased by the relative decline of American colleges and universities as a whole. This relative decline, which was pointed out nearly twenty years ago by President Barnard of Columbia College, is very visible of late years. The population of the United States is supposed by the best authorities to increase about one-third in every period of ten years. In the ten-year period from 1875 to 1884 inclusive, the universities and colleges included in the tables published by the Commissioner of Education show an increase in their number of students of only 11 per cent., instead of $33\frac{1}{3}$ per cent. If we select from the same tables the ten-year period from 1876 to 1885, the increase is 16 per cent.; but the explanation of this higher percentage of increase is that the total number of students in the 1876 was abnormally low, being 2400 below the number of 1875. If we add to the institutions enumerated as universities and colleges all the schools of science and all the higher institutions for the education of women, we still find that this enlarged list of institutions has not gained students at the same rate at which the population has increased, although the schools of science have made very large gains in the decade referred to. Thus the increase in the number of students in universities and colleges, schools of science, and women's colleges, all taken together, was only 23 per cent. in the ten years from 1875 to 1884

inclusive. Obviously there are serious hindrances affecting all the institutions which receive young men and women at the age of eighteen or nineteen to keep them under liberal training for three or four years. One of these hindrances undoubtedly is that the colleges as a whole held too long to a medieval curriculum; but a greater hindrance, in all probability, is the burden imposed upon parents when their elaborately educated sons cannot support themselves in their professions until they are twenty-seven or twenty-eight years old. Hence the importance of the inquiry, Can school programmes be shortened and enriched?

It will not be unprofitable to consider some of the means of improving the American public school, from the primary grade through the high school.

1. In the first place, better programmes need better teachers. The great difference between the French and German secondary schools and the American is in the quality of the teachers. Two modes of improving the general body of teachers in the public schools demand special attention. In the first place, school committees, superintendents, teachers themselves, and all friends of public education should constantly strive to procure a better tenure of office for American teachers. The American schools will never equal the schools of Germany and France until well-proved teachers can secure a tenure during good behavior and efficiency, like teachers in those countries. Consideration, dignity, and quietness of mind go with a permanent tenure, and the public-school service will never compete successfully with the service of private educational corporations in this country until the public employ is as good as the private employ in this regard. Secondly, the average skill of the teachers in the public schools may be increased by raising the present low proportion of male teachers in the schools. Herein lies one of the great causes of the inferiority of the American teaching to the French and German teaching. The proportion of women teachers in American schools is vastly greater than it is in Europe. The larger the proportion of women in any system of public schools, the larger will be the percentage of new appointments every year, and the larger the amount of work done by temporary substitutes. New appointments and substitutes generally mean inexperienced teachers, or, at the best, teachers suddenly put to work in unaccustomed places. This superiority of men as teachers has, of course, nothing whatever to do with the relative intelligence or faithfulness of men and women. It is a well-known fact that

many women enter the public schools as teachers without any intention of long following the business; and also that women are absent from duty from two to three times as much as men. Young men who take up teaching as a temporary expedient are also unsatisfactory material. The schools need the life-work of highly trained and experienced teachers. After these two most important means of raising the average quality of public-school teachers come lesser means which ought not to be neglected; thus, superintendents and committees can do something to improve teachers by invariably advocating the expenditure of money for teaching, rather for mechanical appliances or buildings. Cheap teachers and expensive apparatus and building are precisely the reverse of wise practice, particularly if the fine buildings are not fire-proof after all. Again, the teaching of the public schools can, of course, be improved by the establishment of teachers' examinations, which secure a better preparation in the average teacher, and by methods of supervision which make known the relative merits of teachers who are on probation. Good progress has been made in this direction during the past ten years (1878-88).

2. The second direction of untiring effort should be to the improvement of programmes; for the programmes are all-important to the steady development of the whole system of schools from top to bottom. A good programme will, of course, not execute itself; it must be vivified by the good teacher; but an injudicious programme is an almost insuperable obstacle to the improvement of a city's schools. As a rule, the American programmes do not seem to be substantial enough, from the first year in the primary school onward. There is not enough meat in the diet. They do not bring the child forward fast enough to maintain his interest, and induce him to put forth his strength. Frequent complaint is made of overpressure in the public schools, but Friedrich Paulsen is probably right in saying that it is not work which causes overfatigue so much as lack of interest and lack of conscious progress. The sense that, work as he may, he is not accomplishing anything will wear upon the stoutest adult, much more upon a child. One problem in arithmetic which he cannot solve will try a child more than ten he can solve. One hour of work in which he can take no intelligent interest will wear him out more than two hours of work in which he cannot help being interested. Now, the trouble with much of the work in the public schools is that it is profoundly inevitably uninter-

esting to the childish mind. To enrich the school programme, therefore, and to make serious subjects follow each other in it more rapidly than now, is not necessarily to increase the strain upon the child; it is, however, necessarily to increase the skill demanded of the teacher, and hence the improvement of teachers must go hand in hand with the improvement of programmes. The best way to diminish strain is to increase interest, attractiveness, and the sense of achievement and growth. American teaching in school and college has been chiefly driving and judging; it ought to be leading and inspiring. Here are these beautiful fields—I will show you the way through them. Here are these rewarding exercises—I will show you how to practise them. Here are these heights—I will lead you up them.

3. Much time can be saved in primary and secondary schools by diminishing the number of reviews, and by never aiming at that kind of accuracy of attainment which reviews, followed by examinations, are intended to enforce. Why should an accuracy of knowledge and of statement be habitually demanded of children which adults seldom possess? How many well-educated adults can add long columns of figures correctly, or find the least common multiple or the greatest common divisor of six or eight numbers? Nothing but practice can keep one skilful in these exercises, and we may reasonably be grateful that few people are compelled to keep in the necessary practice. Few adult minds retain accurately considerable masses of isolated facts; and it is commonly observed that minds which are good at that are seldom the best minds. Why do we try to make children do what we do not try to do ourselves? Instead of mastering one subject before going to another, it is almost invariably wise to go on to a superior subject before the inferior has been mastered—mastery being a very rare thing. On the mastery theory, how much new reading or thinking should we adults do? Instead of reviewing arithmetic, study algebra; for algebra will illustrate arithmetic and supply many examples of arithmetical processes. Instead of re-reading a familiar story, read a new one; it will be vastly more interesting, and the common words will all recur—the common words being by far the most valuable ones. Instead of reviewing the physical geography of North America, study South America. There, too, the pupil will find mountain-chains, watersheds, high plateaus, broad plains, great streams, and isothermal lines. The really profitable time to review a subject is not when we have just finished it, but when

we have used it in studying other subjects, and have seen its relations to other subjects and what it is good for. For example, the French programme puts a review of arithmetic, algebra, and geometry into the last year. With all his mathematical powers strengthened by the study of algebra and geometry, and with all the practice of arithmetic which his study of mensuration and algebra has involved, the boy returns at seventeen to arithmetic and finds it infinitely easier than he did at fourteen. Further, the French boy has escaped those most exasperating of arithmetical puzzles which a little easy algebra enables one to solve with facility. Many an educated New-Englander remembers to this day the exasperation he felt when he discovered that problems in Colburn's Sequel, over which he had struggled for hours, could be solved in as many minutes after he had got half-way through Sherwin's Algebra. Is it not an abominable waste of the time and strength of children to put them to doing in a difficult way, never used in real life, something they will be able to do in an easy way a year or two later? To introduce any artificial hardness into the course of training that any human being has to follow is an unpardonable educational sin. There is hardness enough in this world without manufacturing any, particularly for children. On careful search through all the years of the public-school programmes now in use, many places will be found where time can be saved and strain lessened by abandoning the effort to obtain an exaggerated and wholly unnatural accuracy of work. It is one of the worst defects of examinations that they set an artificial value upon accuracy of attainment. Good examination results do not always prove that the training of the children examined has been of the best kind.

4. In almost all the numerous collections of school statistics now published in this country, it appears that the various grades contain children much too old for them, who have apparently been held back. This phenomenon seems to be due partly to the ambition of teachers and partly to the caution of parents. To illustrate with a specific case: in the Boston primary schools, which are intended for children of five to seven years of age inclusive, 44 per cent. of all the children for three years past were over seven; and in the grammar schools of the same city, which are intended for children of from eight to thirteen years inclusive, from 20 to 24 per cent. were over thirteen. It has already been mentioned that the average age of admission to the Latin School is not eleven years, as indicated in the pro-

gramme, but thirteen years. It is really thirteen years and three months. For three years past, from one third to one half of the graduating classes of the Boston grammar schools have been more than six years in the schools, the programme calling for but six years. In the Boston primary and grammar schools the tendency is in the wrong direction; that is, in 1887 there was a larger proportion of pupils over age than in 1877. The ambition of teachers tends to keep children too long in the several grades, because they desire to have their pupils appear well at the periodical examinations, and also because they like to keep in their classes the bright children as aids to the dull ones. The caution of parents tends to produce the same difficulty because they fear over-pressure; not comprehending that with children, as with adults, it is not work so much as worry that injures, or finding that the existing system adds worry to work. The exaggerated notion that it is necessary to master one thing before a child goes to another is also responsible for the retardation of children on their way through the regular course. The result of this retardation is that the boy comes too late to the high school or to the Latin School, and so fails to complete that higher course if he is going into business, or comes too late to college if his education is to be more prolonged. The great body of children ought to pass regularly from one grade to another, without delay, at the ages set down on the programme; and any method of examination which interferes with this regular progress does more harm than good. Of late years many experiments have been made on semiannual promotions and other means of hurrying forward the brighter children. The aim of these experiments is laudable; but the statistics suggest a doubt whether semiannual promotions really promote, and whether they do not disturb to an inexpedient degree the orderly progress of the school work. In general the work of any school must be laid out by years, and on this account irregular promotions will hardly provide a remedy against the common evil of retardation.¹

5. If we look back a generation, or two generations, in the history of American schools, we shall find that the time spent in school by children during a year has been decidedly reduced; although great improvements have been made during the same period in the ventilation of school buildings, and various bodily exercises, such as singing, gymnastics, and military drill, have been introduced. This reduction of school hours has gone quite

¹ Irregular and rapid promotion has been greatly facilitated since 1888.

far enough, and some steps need to be taken in the other direction. The ideal school should be so conducted that the child's physique is not impaired by attending it, or his enjoyment of his daily life lessened. Then longer school hours would not be unsafe or unwelcome. It should be the teachers that need rest and vacation, and not the children. In cities vacation schools seem to be a desirable addition to our present organization. A long vacation may be a very good thing for children who have at home some intellectual resources, or who can go to the country or to the sea in vacation, and there learn some things not found in books; but for the children of ignorant or heedless parents, who have nothing of intellectual life to offer them at home, a long vacation is likely to be a serious injury, particularly in cities and large towns. Vacation schools tend to bring forward, or keep up, the least favored children, thus accelerating the general rate of progress during the year.

The chief objects of this address are, first, to point out a serious difficulty which is embarrassing the whole course of American education; and, secondly, to indicate briefly a few of the directions in which labor may be wisely spent in improving our school system, to the general end that the pupils may receive a better training in a shorter time.

THE ECONOMY OF TIME²

Nature of the Inquiry. This investigation was prompted by the seeming need of a comprehensive view of the whole field of American education. Special problems were discussed in a fragmentary way, without consideration of related questions and without hope of even temporary conclusions. The length of the college course, and the relation of the college to the university proper, was a leading topic. But this involved the question of the length of the whole period of general education, the waste in elementary education, the place of the secondary school, the relation of educational aims to civic needs and the ideals of our civilization, the definition of culture.

The problem assumed this form: The period of general education is too long; economy in the selection of subjects and topics and in methods will save approximately two years in the whole

²Report of the Committee of the National Council of Education on Economy of Time in Education. James H. Baker, Chairman. *United States Bureau of Education Bulletin*, 1913, No. 38, Pp. 9-19.

period of general education; with greater efficiency in the earlier periods the college course may well end nominally at 20 instead of 22; a redefinition of culture may modify the preparatory period; the ideals of our civilization to-day may affect the view of culture and the desirable limit for formal training.

Length of the Period of General Education. The length of the preparatory period in America is exceptional. The German student advances at once from the gymnasium to the university. The French student enters the university from the *lycée*, except that for certain faculties a year or two of supplementary preparation is required which may be taken either in the better *lycées* or in the general courses of the university. The English student enters the university from the public school; and Oxford and Cambridge are universities in a sense not represented by the American college. The English university, besides the traditional course which has always had a special significance in England, offers at the start a choice among many groups leading to law, medicine, theology, or a knowledge of various sciences. It is understood that the nominal age for completing the secondary course in European schools is the same as for our high-school graduation.

Since the early New England college we have added four years to preparation and three or four years to specializing for the professions. Instead of converting the college into a university, we have piled the German university on top of our imitation of the English type (the college) without adjustment of the educational system, and the condition is full of difficulties and absurdities.

The early New England college met the simple conditions of its day and served both as a school of culture and in a way as a professional school. Until comparatively recent times it still performed a widely useful function as a broad preparation for business and the professions. But the recent rapid differentiations in professional, commercial, and industrial life, and the increased demand for knowledge and skill in each line, changed the whole aspect of the college problem in so far as in the past it represented professional training. Special education must occupy, in part at least, the place of the college. To-day the college, interposed between the high school and the university, occupies an anomalous position, and one that is no longer tenable unless important adjustments are made. The high school and the university include its former functions.

The committee agree (and for reasons which will appear) that "graduate" and professional studies should begin at about 20. They will attempt to show that the saving of two years in time need be no loss in education.

The committee here present a provisional time scheme to be discussed later:

Elementary education	6 to 12
Secondary education (2 divisions—4 years and 2 years)	12 to 18
College	18 to 20 or 16 to 20
University (graduate school and professional schools)	20 to 24

Educational Principles Involved—Vocational Education. Perhaps the most difficult part of this investigation is the one involving principles of education and the relation of vocational education to the main question. Here is a brief summary of the committee's views:

1. The period of general education must be shortened in order that the vocation training—that of the graduate and professional schools—may fall within the period of greatest energy and adaptability. In other words, there must be an economic division of time in the "plastic" period between general and special preparation for life. Too long a period of preparation, general and special, may unfit for action. The age of 22 is too old to begin specialization, and 27 is too old to begin apprenticeship in a profession.

2. There is loss of interest and energy in a long preparatory period of unmotivated study.

3. The fundamentals of elementary education—facts, habits, dexterities, sentiments, etc.—can be taught in six school years, allowing the elementary period to end at 12.

4. At the end of the first six years of school the child requires new and varied interests, beyond those found in the elementary curriculum. Many believe that for physiological, as well as psychological, reasons a beginning in subjects and methods of secondary education should be made earlier.

5. By a division of the six-year high school into two periods, junior and senior, a large number would complete the first period; the plan would be adapted to an advanced grade of vocational school between 15 or 16 and 18 for pupils unable to

continue a general course. The whole scheme then would provide for vocational lines of work beginning at 12, 15 or 16, 18, and 20.

6. For economy, subject matter should be made a means and not an end. The aim should be to gain a few fundamental facts, power and inspiration, and the ability to go alone. There is great waste in material and method.

7. The idea of culture must be modernized, reinterpreted in terms of present-day need, in terms of the value of the individual in the industrial and the social scheme. Every man has his own definition of culture, and for a particular discussion it means nothing if not defined. The majority of our correspondents give culture a wide meaning and include whatever prepares for the large demands of life—personal efficiency, civic fitness, rational enjoyment. Each member of the committee would define culture differently, but agree that it should include power for the higher appreciations of life. They further believe that culture may grow out of an education which is more conscious of its motives and spends less time in purposeless study. Culture in the sense of power of appreciation is not a "study," but is due to timely suggestion, inspiring influence, and guidance. There is much waste in the 16 years of general education, and "culture" has been made the chief excuse for it.

This report has to do primarily with the whole period of general and special education for those who take both in their entire extent. But since the problem of vocational studies also affects the question, it can not be omitted. The status of this problem in the United States to-day is about as follows:

1. It is understood that boys who, through the home, have gained some kind of manual skill, such as may be had by working in shops or on the farm, have a great advantage in substantial character, and in a wise attitude toward life.

2. Motor training in various forms is a recognized part of general education. Manual training has a well-recognized general educational value.

3. Vocational education (commercial, technical, industrial, trade) is now making large claims on the public schools.

4. Conservative educators would connect all work looking toward a vocation with the present schools, allowing for it about one-fourth of the time, making it elective, making it preparatory to various industries, limiting the kind and number of industries selected by the conditions of each locality.

5. A large number would separate vocational work from the regular schools.

6. For a large class of pupils it is proposed to begin industrial education (general foundation for each of several industries, together with selected general studies) at about 12 and end at about 16.

7. A majority claim that trade schools as such, leading to apprenticeships, can not be profitable before 16; that, whenever possible, trades are better learned in connection with the shops, but that compulsory laws should secure part time in school for young apprentices.

8. There are special problems in highly congested centers that would greatly modify the general principle and call for earlier and more technical preparation for industrial work.

The committee are in sympathy with the wise claims of industrial education, but believe that the heritage of the race in the form of systematized knowledge will always be the foundation of education. They believe that humanism in the form of interest in the thoughts and lives of men needs not less, but more, emphasis; that scientific knowledge, rational power, and aesthetic and ethical appreciation are the highest ideals of our civilization, but that learning will be more and more vitalized by relating it to the life of the present day.

Representative opinion holds that our schools are not giving results proportionate to the time, in efficiency, culture, or character. There is a growing belief that in the name of culture much time is wasted, without securing real culture or substantial character, which is the prime element of culture. As an economic ideal, the vocational movement looks toward preparation for skilled employment for those pupils who otherwise would leave school and become unskilled laborers. The fact that under present conditions many pupils leave at the end of the sixth grade is an additional argument for the time scheme proposed by the committee. The demand upon the scientific and professional schools for thorough and extended courses calls for economy in all the preparatory courses (including the college). The vocational movement in the end will not detract from the culture ideal, but will give it a clearer interpretation. We believe that nothing will be lost to the best ideals of our civilization—power of reflection, or the need of transmuting wealth into scientific knowledge, literature, art, and ethical standards. Allowing for all historical differences, the results in older countries, in develop-

ing high intellectual power, confirm this view of the educational scheme.

Sociological View. The relation of our educational aims to civic needs has been too much neglected. Every kind of a scientific, philosophical, and experimental method of studying education is in vogue, but the criticism of results, now so common, awakens us to the need of a simple examination of the ends proposed, and adapting the means to the end. Throughout the history of civilization, education has been determined or modified by the ideals and philosophy of the people, and by material conditions of life, and we in America can not ignore the just claims of representative criticism outside of the calling.

If we understand the conditions to-day, there is a demand for more efficiency, and for a culture which is related to real life and whose core is moral character. Education must be in harmony with its environment, but it must develop also original power to change the environment and to cope with whatever problems of efficiency and ethical conditions a given period may present.

New views of the needs of society change the old aristocratic ideal of culture and make it democratic in opportunity and purpose. This change requires that less time be given the old humanities and more weight be placed upon preparation for efficiency and service. The scientific method, broad concepts, and the higher appreciations must ever be the foundation of citizenship and of practical activities; but a larger proportion of time must be given to the vocational aims. This ratio will be approximately determined as a question of proper balance between receptive study and practical motor activity, also as a question of the economic division between preparation for life and active life. There has always been a selfishly unsocial factor in culture, and the whole movement of to-day is to correct this by connecting higher education and all education with democracy.

If, as in Germany, professional studies began earlier, with the motive of service to the State, the false element in culture would be largely eliminated and a better citizenship would result. It would seem evident that earlier specialization, beginning at about 20, would promote all industrial and scientific interests, and would result in an expert knowledge of many problems of government and society. Moreover, there would be a distinct economic advantage, in terms of social fitness and intellectual power of the nation, in graduating earlier from preparatory

courses, and carrying through real university training those especially fitted to profit by it. To consider the earlier years, many leave school at the end of the sixth grade who would be retained if practical studies were offered them. This would result in the efficiency of a larger number, and the training would have also a cultural value. Of course this is another argument for the time scheme proposed.

If we consider those who go through college and the professional school, by shortening the time, the two additional years of active life and the greater power, hope, and enthusiasm of the earlier age would be a great economic advantage. It may be argued that here would be a loss in intelligent citizenship of the higher quality, because of the shorter culture period. But we believe the better methods of education in the proposed scheme of economy and the larger spirit of service would prevent any such loss.

Our great problem is to bring together the science and power of the schools and the popular will. The coöperation of higher education and democracy is the salvation of both. An educated aristocracy is not the ideal of the people, but a learning that shall be serviceable and represent their highest needs, aspirations, and ideals. They accept real culture, scientific power, trained skill, and are willing to pay for them. But they believe there is waste, a nonsocial element, inefficiency in some of the ways and means. The scheme proposed would tend to enlist the sympathy and support of the people.

Economy in Elementary Education. We approach now the question of saving time in the elementary period or of accomplishing more within the time. There must be important reasons why in Germany, France, and England the secondary graduate is believed to be two years ahead of our high-school graduates. Here are some reasons, assigned by a recent writer, for the superior progress in German schools: Beginning many subjects earlier than is the custom in America, such as foreign languages, elementary science, history; absence of marks and examinations; care of pupils as individuals; greater length of school year.

The committee agree that there is much waste in elementary education, and that the elementary period should be from 6 to 12. Nearly all of our correspondents are emphatic regarding waste and the importance of shortening the entire period of general education. Saving of time can be made in the following ways:

1. The principle of selection is first: Choose the most important subjects and the most important topics; make a distinction between first-rate facts and principles and tenth-rate; prune thoroughly, stick to the elements of a subject; do not try to teach everything that is good; confine the period of elementary education to mastering the tools of education. This does not prevent inspirational work, which is a demand on the skill of the teacher rather than on time. A great secret of education is to accomplish a maximum of training with a minimum of material. This is especially true of formal subjects; it is true also of inspirational subjects in that after a general survey of the field emphasis should be placed upon a few selected points. Under the conditions above enumerated the formal elementary period can end in six years.

2. Content subjects should not be taught with the methods suitable to the formal subjects; for instance, in the elementary period literature, history, science should be inspirational; this does not mean presentation to pupils of amusing stuff. No doctrine has been more harmful than that one subject of study is as good as another, and that all subjects should be taught alike; arithmetic is a tool and a discipline in absolute accuracy; literature, history, and elementary science in this period are for culture.

3. Include the last two years of the elementary school in the period of secondary education and begin the study of foreign language, elementary algebra, constructive geometry, elementary science, and history two years earlier.

The High-School Problem. The committee favor the change noted in a previous statement, for the reason that it will adjust itself to present tendencies more conveniently than any other, and because it represents, we believe, essential principles in the organization of education. The proposition to make the high-school period 12-18 or 12-16 and the college period 18-20 or 16-20 will adjust itself in the following ways: (1) It begins high-school work at the proper time and continues it to the recognized age of college admission or of beginning life (12-18); (2) it provides for a large number who will enter vocations at 16 and adjusts itself to the idea of an intermediate industrial school (12-16); (3) it provides for the contingency that the college course in the reorganized scheme will end with the sophomore year and that the two years of college may be done in the university or in the larger high schools, and that the independent colleges may make a four-year course (16-20), admitting from

the smaller high schools at 16. It should be noted that this whole discussion is a vastly different thing from the question of shortening the college course.

As to economy of instruction, the following principles may be stated:

(1) In general the principles recommended for elementary education apply equally to secondary education.

(2) Simplify the courses of instruction; cease multiplying subjects; concentrate on a few valuable studies—it is not necessary to take all the sciences in a high school; make college entrance requirements reasonable. The great mistake of our education is to suppose that quantity and strain constitute education. Education is a question of doing a few essential things well and without overstrain. The college has committed a grievous mistake in demanding ever more in quantity rather than in quality produced under conditions of healthy normal development.

(3) It is of prime importance that, so far as possible, subjects be vitalized and related to modern life, and be adapted to the pupil's interests, capacity, and mental development.

(4) The principle of selection obtains here—choice of subjects and of facts and principles under each subject; also differentiation of method—training from formal subjects, and knowledge and inspiration from certain content subjects.

(5) By far the greatest emphasis is given by our correspondents to moral training and preparation for citizenship.

(6) Under the conditions recommended for elementary and secondary education, the committee believe that as much can be accomplished at the age of 18 as at 20 under present conditions, and that the period now represented by the school and college can be shortened at least two years. It is to be understood there should be less, rather than more, cramming, strain, and mechanical measure of values.

The College Problem. In a way the whole previous study has been made with reference to the college problem. The committee believe that shortening the whole period of general education is inevitable and necessary; that college work must end at about 20, and university work must begin at that age. Since this result appears to be in the near future, is it not time for the universities to take hold of the problem and aid in the reorganization of the scheme of education? A somewhat remarkable judgment appears in the summary of the opinions of our correspondents upon the

subject of the college and university. Approximately one-half favor ending the college work with the sophomore year and beginning university work with the junior year—this work to count toward the higher and professional degrees—and building the schools of medicine, law, and engineering on the present first two years of college. In other words, the university age is to be 20, instead of 22. Until the reorganization and adjustment are effected the majority would retain the A.B. degree at its present standard, allowing, however, almost any consistent group, cultural or professional, to be elected the last two years.

The present tendency in the reorganization of the college is really preparing the way for the adjustment recommended. We quote from a report made to the National Association of State Universities and unanimously adopted. This part of the report was really intended to look forward to the time when the university would be founded on two years of college.

Present tendencies point, in our opinion, then, to a definite differentiation in the work of the college at the close of the sophomore year toward university work in the real sense. If these views are just, we suggest the following formulation of principles underlying the organization of such an institution, and we may define the standard American university to be an institution—

Which offers in the college of liberal arts and sciences two years of general or liberal work completing or supplementing the work of the high school;

Which offers a further course of two years so arranged that the student may begin work of university character leading to the bachelor's degree at the end, and reaching forward to the continuation of this work in the graduate school or the professional school.

In recommending that University work begin with the junior year of the college and that the professional schools be based on the first two years of college, the report is in line with present tendencies. It is in accord with the growing belief that the work of the last two years of college should be organized into groups that aim at more definite results and lead to greater efficiency. But this is only the first of many problems. We are facing questions of the time beyond the junior year for attaining the Ph.D. degree, of adjusting the scheme of counting the last two years toward both arts and professional degrees, of the place of the A.B. degree, of the age when the period of general education

should end, and of a possible reorganization of elementary and secondary education. But these questions are not ready for solution and hardly belong to the work of the committee at the present time.

When by economy—this does not mean more cramming, but less—as much can be accomplished in the elementary and secondary schools and in the first two years of college as is now done in the full 16 years, the last two years of college can count toward graduate and professional, degrees, and two years in the whole period can be saved. In other words, the graduate school and the professional schools constituting the university would be built on the first two years of college. The present device is a makeshift. Finally, this whole discussion is to be understood as looking toward a very different thing than the shortening of the college course.

Conclusions. The committee draw the following general conclusions:

1. The contemporary judgment is that the period of general education should be shortened at least two years.
2. This judgment is supported by the demands of society to-day, both practical and ideal.
3. It is claimed that more will be accomplished for a people if the preparatory stage of education ends at a reasonable period and special aims be emphasized while the mind is at a high degree of adaptability, energy, and interest.
4. In the elementary and secondary period, economy through selection, elimination, vital methods, relation to modern life would yield much better results, and little or nothing would be lost by the proposed change in time.
5. The American college in its present form presents problems for immediate solution; there is no longer an excuse for it as a mere four-year addition to the two earlier periods of education. The history of European education supports this view. This is not the same question as that of abolishing the college or of shortening the college course.
6. It is recommended that all university colleges organize the last two years in view of the coming elimination of two years in the whole period of preparatory education, and make them of the university type in form and method. When the college degree can be reached at about 20, those two years can become a part of the real university, consisting of a reorganization of the present graduate and professional schools.

7. It is recommended that the "National Association of State Universities" and the national "Department of Superintendence" be urged to continue their work on this problem—both the economy of time in the period of general education and the form or reorganization throughout; that the "Association of American Universities" be invited to coöperate. Upon these bodies will rest the responsibility of a final solution.

8. To define the form of discussion, the following divisions of the entire period of general and special education are proposed:

Elementary education	6 to 12
Secondary education (2 divisions—4 years and 2 years)	12 to 18
College	18 to 20 or 16 to 20
University (graduate school and professional schools)	20 to 24

TYPICAL EXPERIMENTS FOR ECONOMIZING TIME IN ELEMENTARY SCHOOLS ^a

BY FRANK E. THOMPSON

There is ample material, and excellent material too, for a chapter or even a book on this subject. This paper must be limited to some general observations on the economizing of time and a brief but, it is hoped, a faithful characterization of the types to which the various experiments are readily reduced. In the first place, let it be said that all of the persons who are experimenting and the *hundred or so* who have taken the trouble, often a great deal of trouble, to respond to inquiries, are apparently impressed deeply with the belief that so far, the possibilities of our education have not been anywhere nearly realized. Furthermore, and this is an exceedingly healthy condition, they believe pretty generally that it is not one little thing nor even some one considerable thing that is needed to make the system yield these larger results. A surprising proportion of those who have answered—easily 75 per cent—indicate more or less explicitly their conviction that all of our educational procedure will need to be examined and later adjusted, one part to another and every part to every other part, before it will produce results

^a *Fourteenth Yearbook of the National Society for the Study of Education*, Part I. 1915. Pp. 28-36. Abridged.

commensurate with its possibility. The same persons seem confident that such readjustment is entirely feasible, is even already well begun. Not many have indicated very much interest in the shortening of the period of education, but almost everyone, explicitly or by implication, would have much more accomplished within this period. The impression would seem to be that our aims for education are not far from right, that our materials, generally speaking, are not badly suited, and, with a few exceptions, that the period in which our work is to be done is about right, but that so far we have not begun to arrange these materials nor emphasize activities to the attainment of aims within the time allowed to anything like their possibilities. Fully nine-tenths of the experiments and suggestions reduce to attempts at better sequence of subject-matter, better correlation with the pupil's ability or with other subjects, more industry on the part of the pupil, more effective assistance by the teacher, and other things of the same general sort. Educators are trying to save time, not to the end of having more time for something else than education, but to the end of having more in it of education; in general, "economy of time" is but a synonym for "efficiency."

Despite the fact that the problem is not anywhere regarded as simple and that practically no one has a panacea to propose, the experiments under way, or suggested, readily reduce to comparatively few types. The experiments of each type all, or practically all, aim to do what was just suggested, namely, to make more of the possibilities inherent in materials, pupils, and teachers in the present time allotment. Apparent exceptions, such, for example, as shortening the elementary course of study one or two years, show on examination that the advocate contemplates for the pupil a longer course either in some trade or technical school, somewhere about the high-school age, or in professional, cultural, or research activities at the graduate level. Almost no one indicates a wish to get the student completely out of school at an earlier age. Some would get the pupil in touch with life's activities earlier, but practically all would accomplish this either by bringing such activities more actually into the school or by taking the school (or its students) more into the midst of such activities. Again no one seems anxious to terminate the child's connection with the schools at an earlier period. Though some of the types enumerated and some of the instances specified under the types which follow may not at first reveal their pertinence to the economizing of time, the instances have

all been adduced as attempts at that end, many of them, of course, in the better-use-of-time sense.

BRIEF CHARACTERIZATION OF TYPES DISCOVERED

1. *Regrouping of the school years.*—The experiments under this type are numerous and include such regroupings as are commonly known as the six-six plan, the six-three-three plan, the seven-one-four plan, the six-two-four plan, the seven-five plan, and the seven-two-three plan. Closely associated with these in several instances are plans for the elimination of the eighth grade, but, on examination, in most instances there is no true elimination of the eighth-grade work. Some of it is usually found to be crowded down into the lower grades and some of it has been pushed ahead into the higher grades. Where, by this regrouping “elementary” education is shortened, the purposes and probably the effects are the clearing of the course to some extent of nonessentials; the bringing of goals (such as graduation, the conclusion of a certain course of study, etc.) closer; getting pupils into intermediate or high-school earlier; “speeding up”; keeping pupils in school longer; securing better correspondence of certain types of work with “epochs” in the child’s life; dividing the work into more reasonable instalments; and providing better shunting-points that pupils may, to better advantage, change from one course or type of school to another parallel with it. According to testimony, these plans work well, and inasmuch as the differences between them are not so great after all, especially at what may be regarded as the crucial point—the seventh and eighth grade—we may predict that some one of them, probably the six-three-three plan, will soon take a decided lead over the others and the present eight-four plan.

2. *Modifications of grading and promotion schemes.*—A great many schools are trying out grading and promotion schemes, in general by making more subdivisions of the year grade, such as half-year grades; term grades (usually twelve weeks); quarter-year grades; and no grades at all, that is, ungraded sections; “quick” and “slow” sections. Promotions, in most instances, are possible at any and all of these grade divisions; and over and above that, in some instances, by subjects, on the basis of special examinations; and for work carried “with honor.” The purposes specified are: bringing goals closer; spurring the pupil to his best by competition with his own record, with the records

of his school and of other schools, and with his fellows; making it possible for each pupil to find the pace best suited to his health, ambitions, or peculiarities; making possible a change of pace, without serious inconvenience, on occasion or necessity. Enthusiastic reports of good results are the rule in connection with this type of experiment, and there can be little doubt that much has been done and will be done in these ways to accommodate the individual pupil and to bring into education more effectively one of the greatest factors in any improved efficiency scheme—competition.

3. *Rearrangements and eliminations of subject-matter.*—These experiments might almost be classed as of two different types—rearrangements and eliminations—were it not for two facts which examination of them reveals: that the two are always complicated in any specific instance and that as a rule there is no real elimination, but rather minimization, transference, or substitution; for example, a topic may drop out of arithmetic but reappear, in modified form in geography. It is difficult to characterize the experimentation of this type for the reason that it is going on in all of the subjects and in all of the grades. Perhaps the most salient thing to be noted is that a challenge of its right to its place and emphasis is being put to every subject and topic. Another salient characteristic is a search after logical and psychological sequence, correlation, and subordination. The aims most frequently specified are: to relieve the pupils of dead and uninteresting occupation; to employ them with things of which they can see the importance; to avoid cluttering their minds with bric-à-brac of curious and antique sort; to compensate for paucity of detail by clarity of outline; to secure the study of subjects at more favorable periods of the pupil's development; by correlation and concentration to "kill two birds with one stone."

4. *Extra-time and emphasis schemes.*—Extra time is provided for in after-school classes, special classes, evening schools, summer schools, and by ingenious adjustments in some instances which permit the pupil to emphasize his more difficult subjects in time taken from easier ones. The purposes of these experiments are variously specified as: giving the pupil a chance to keep up by means of extra work instead of falling behind; to get ahead in time or power if he chooses; to maintain during inter-school periods, (for example, in the summer) a hard-earned momentum; to keep pupils in the spirit of school work, to save

time that otherwise would have to be given to the warming-up process. Some of the most hopeful reports of progress have been given in connection with these innovations. In some places the whole spirit of schools and community would seem to have been changed. Comparison with European school systems, especially those of Germany, France, and Switzerland, tends to force upon us the conviction that so far we have not made enough of our schools in a time way, that is, they do not take up enough of our time, are not in our lives enough; modern industrial conditions no longer very generally justify numerous and long vacations. We are realizing more and more that education is not an incident of life, but, instead, a very large part of it. More than that, we are beginning to realize, when we think in world-terms, that preparation for the world's work cannot be made in brief and intermittent attacks.

5. *Tying the school up with the life and occupations of the community.*—This sort of thing is reported from every part of the country and usually as though it were (as it is) the discovery of the times. It takes on many forms, such as allowing credit for non-academic exercises in school-time; allowing credit for work done at home or in the shop or store; arranging for industrial work in connection with school work; introducing into the school the study of community phenomena; interesting the home, church, press, and other institutions in the school's activities. The reasons alleged are that these things make for greater attractiveness of school life, for insight into the relationships of school and life, for fuller occupation of the pupil's powers, for the larger power that comes through versatility. There can be no doubt that, rightly administered, all these advantages obtain and that all of the arguments urged in favor of extra-time schemes apply equally well here; in fact, these are the ways, to quite an extent, in which to expend extra time.

6. *Modifications of recitation, assignment, and study schemes.* These instances are almost as numerous as the schools of the country, and the substitutions proposed for the present usages are of every degree of ingenuity. That there are enormous unrealized possibilities in the contact of the pupil with the teacher and in the exercises in which the pupil engages, or should engage, seems to be a profound and widespread conviction. The more common instances reported are such as the setting aside of a part of the recitation period for supervised study; devoting different recitations to different and carefully discriminated uses, such

as reviews; preparation for future lessons; application of principles to problems; giving pupils assignments of a degree of difficulty adjusted to age and experience—all to the end that the pupil may come to acquaintance with, and use of, his mind; acquaintance with, and respect for, the minds of others; capacity to express himself on short notice. All these and many more are legitimate aims of the recitation, the study period, and various less formalized school exercises. The agitation in this field is a matter of immense promise. We have long said that it is not what one does that counts so much, it is the manner in which he does it. We still more than half believe (the wish being father to the thought) that there is a good deal in formal discipline. Now that we are really looking into the possibilities of teacher-pupil and pupil-school contacts, we may expect to realize something as good as if not better than the things which formal discipline, were it a possibility, would give us.

7. *The training of superintendents, principals, and teachers for expert service.*—Here again the air is full of hope. Teacher-training institutions are seriously, and as never before, considering just what goes into the make-up of the successful teacher. The teacher is being analyzed out to his ultimate constituents. He is being thought of no longer, or at any rate not so much, in a sentimental way. He is an expert. His function is to help children to learn—to become. He is thought of as immoral if he wastes time or permits it to be wasted. He is being held almost universally to a more strict account than even the minister. A great many of those who report see in the teacher the key to the whole economy problem. He is the inspirer, the technically trained adviser, as well as and more than the taskmaster. Not only are certification requirements and plans for such requirements stipulating more in detail the teacher's qualifications, but numerous provisions are being made and advocated for the improvement of teachers while in service. To make the teacher's profession one of dignity and worth could well be one of the most practical objectives in the campaign for wise economy of time; in fact, and obviously, no advanced ground can be taken and held without the dependable teacher.

8. *Measurement and appraisal of results.*—This is presented last, not because least in importance nor because less frequently mentioned, but rather because everything else is, in a way, dependent upon it. School people are trying everywhere, some with scientific insight and some without, to estimate the outcomes, the

results, following upon their hard work. There is general, wholesale, and wholesome suspicion of ritual in education and conventional justifications of ritual. It is quite unnecessary here to mention the proposed tests and measurement scales with which we are all familiar, or the surveys which are being undertaken or have been completed in all parts of the country. It may not be irrelevant to call attention to the fact that even the rank-and-file teacher is beginning to talk in terms of surfaces of frequency, the personal equation, etc., and their relations to the marking system, and that even in remote places the superintendent or principal is discussing such matters in teachers' meetings. From the movement for standards and measurements it is expected that we shall be able better to say just what is being done, just what each is doing, so that the educator shall be guilty neither of too much nor of too little endeavor, that one pupil may be rated accurately with reference to another, that one school may be rated accurately with reference to another, that one teacher may be rated accurately with reference to another, all to the end that competition may be intelligently and effectively encouraged.

Some other types of "progressive experiments in economizing time" appear in the returns, but will not be discussed in this paper. One other at least ought to be mentioned—the general campaign for improvement of the health and "condition" of the pupils—and its mention is probably sufficient to bring to mind its intimate and enormously important relation to any true economizing of time.

These gleanings, which are here so broadly sketched, seem to the writer to accord perfectly with the view expressed in the first section, that essentially, the problem of economizing time in education in the mind of the American educator reduces simply to making *better use* of time. Few persons, we take it, will be found who think that we have not time enough in which to do the work of education, and quite as few, probably, who think that the material, the subject-matter, available for education is not adequate. We have the things to do with and we have the time in which to do; we are doing pretty well as it is; but we are trying to do better—to use the materials we have, in the time we have, for the production of *better results*. We ought not to be in doubt as to the nature of these results; the very purpose of "America," its democracy, indicates as the duty and the program of education in America: *to raise the levels of skill, intelligence, and character in as many as possible, as high as possible, as soon*

as possible. This is our aim of education, and this is why we should economize time.

To economize time it is required that the right persons, under the right leaders, shall use the right materials, at the right time, in the right way. The right persons are those who are in "condition" to work and who see that the work they are doing is pertinent to the attainment of reasonably immediate and attractive goals. The right leaders are those teachers, principals, superintendents who are clear as to the purpose and worth of life, who believe in life, and who are possessed of the appropriate knowledge and technique. The right materials are such exercises as will lead, *and can be seen by those who take them to lead*, definitely, and with fair directness, to worthy and desired goals. The right time is early—before the edge of interest is dulled—before irrelevant habits are formed. The right way is industriously, competitively, cheerfully; with as much freedom as possible from distraction; with occasional refreshment and reanimation.

The right carrying out of such a program requires the further segregation of its elements. It is necessary to see clearly the particular matters administration must work with and upon, that emphasis and correlation may be intelligent. It is necessary to figure out just what are the *means* of improvement—of economy. We shall not be far wrong if we say we are economizing or getting in a way to economize wherever we are really securing one or more of the following: (1) better "condition" of pupils; (2) more definite, attractive, and immediate, as well as distant, goals; (3) a course of study more pertinent in content and more psychological in sequence; (4) wiser, more tactful, and more human teachers; (5) a student-body more devoted and industrious, as well as cheerful; (6) a completer elimination or minimization of distractions; (7) more timely beginnings in all activities; (8) more industrious prosecution of work; (9) keener competition of the pupil, with himself and with others; (10) saner refreshment and reanimation of pupils.

That these are the *means* to a higher educational efficiency—to the economizing of time—and that they are believed in by American educators, is made to look probable by the fact that practically all attempts, of which we have learned, to improve things, in whatever part of the country, readily appear as attempts to accomplish one or more of them. These attempts are various—are undertaken sometimes with more, often with less, vision of the whole problem, but all of them are earnest attempts

and may be called, in the best sense of the term, "experiments" in economizing time.

INTELLIGENCE TESTS AND ECONOMY OF TIME⁴

BY ARTHUR W. KALLOM

Tests, either intelligence or achievement, may be given for three reasons: (1) for the purpose of collecting data; (2) for the purpose of satisfying the curiosity of the teacher; (3) for the purpose of bringing a definite constructive help to the teacher in guiding and aiding her in dealing with some of the problems with which she is confronted.

Up to the present, much of the work of educational measurement has been concerned with the first step. This is important. It has made it possible to establish standards, it has confirmed the theories that the educational product is variable and not constant, it has emphasized and placed on a more or less scientific basis, perhaps, the greatest educational fact of the past generation, namely, individual difference. There is still need for a great deal of work to be done along this line. This research work is the work of universities, foundations, and similar bodies and not the work of city departments, which are supported by public money. Their research work, *per se*, is a by-product.

It is a good sign to see the teacher's curiosity aroused to know what her class will do with certain tests. Perhaps she has a suspicion that *her* class will not show marked signs of individuality because *her* class was a selected group and because children of about the same grade of ability were put together in her room. Therefore she is curious to see if some of the theories of the savants can not be exploded and is much surprised to find that there is, perhaps, as great variation in her room as in another room not so carefully selected.

The teacher who is curious to know what will happen when a test is given should be greatly encouraged, because out of the "knowing" is going to come "doing." Out of the knowledge of where each pupil stands is going to come a better directed effort to help those who need help, to drill those who need drilling, and to guide those who need guiding. The efficient teacher is the one who is accepting all the help which tests can give in promoting, drilling, and guiding. Such a teacher makes it justi-

⁴ *Journal of Educational Research*, V, 389-399. May, 1922. Abridged.

fiable for a city school system to expend public money for a department of research. Directly or indirectly such a department makes it possible for the taxpayer's son and daughter to be better and more efficiently taught than before; better taught because both teacher and pupil have a definite aim toward which to press, and more efficiently taught because the teacher with a more direct knowledge of what the child is able to do can save valuable time.

Intelligence Tests.—During the past few years intelligence tests have held a prominent place in the testing program of departments of research and of all up-to-date superintendents. Such tests are fraught with a good deal of difficulty unless one is careful how the results are used and unless the one in charge realizes the limitations of such a test. Two cases will illustrate what I mean.

In a certain city one of the well-known group intelligence tests was used and a certain pupil scored low. The score was so low that the pupil was judged feeble-minded by the principal, and the parents were asked to withdraw the pupil from the school. The parents objected, and when he was tested by a competent person, using the Binet-Simon scale, the boy showed an intelligence quotient of 123.

The second case was a girl in one of our Boston schools who tested low with the National Intelligence Test but who was judged one of the brightest children in the school by the teachers. The possibility of such a condition was admitted, but an individual test was given. The girl showed an I. Q. of 115. It was found upon investigation that, on the morning the group tests were given the girl had come from home after witnessing a brawl between her father and mother in which she was obliged to take some part. She had had no breakfast and had taken the test within half an hour after arriving at school.

The giving of a group intelligence test in a public school system by the superintendent or director of research, may have one or more of a number of possible objects in view. In Boston there have been four main reasons for giving such tests: (1) to guide teachers in making promotions; (2) to guide pupils in their choice of courses; (3) to advance demoted pupils; and (4) to guide teachers in dealing with individuals who are failing in their work.

Use of Intelligence Tests in Making Promotions. In March, 1921, 45 districts were tested with the National Group Intelligence Tests. In spite of the request of most of the principals that

all grades should be included, only Grades VI, VII, and VIII were tested, owing to the expense and inability to handle results.

Grade VI was tested in order that the results might be used in the promotion of children to intermediate or junior high schools. Grade VII was tested with the expectation that the eighth grade would be better organized for promotion to high school the succeeding year. Grade VIII was tested that teachers might have the data to guide them in promoting to high school. The succeeding fall the data collected from Grade VIII were also used by the high-school principals and teachers.

In promoting a pupil, two factors were taken into consideration—his test score, and his teacher's mark. If the two agreed, there was no particular difficulty in settling the question of promotion. If the individual's test score was high and the teacher's mark low, he was promoted on the basis of his test score. If the teacher's mark was high and the test score low, he was promoted on the basis of the teacher's mark. In either case, it will be noted, the pupil was given the benefit of the doubt. These pupils, therefore, became marked pupils and have been problems for study during the year. How far children who were promoted on teachers' marks have succeeded will not be known until the end of the year.

Intelligence Tests Aid in Guiding Pupils to Choice of Courses. Children entering the seventh grade in any Boston intermediate school, may choose to take a modern foreign language, either French, Spanish, Italian, or German. Each school may have only one foreign language, however. Because this modern foreign language is an extra subject, only those children are allowed to take it, whose marks are equivalent to an average of B.

Of 51 children in one school who were tested in the sixth grade and placed in French classes, 25 percent had a score of less than 109, the median of the sixth grade. Of this 25 percent, 39 percent made good, but in every instance effort and conduct were excellent. Of the 75 percent who were above the median, only 2 persons or 4 percent failed. One of these had an effort of E and a conduct of D. This school is typical of all intermediate schools.

Therefore, for a pupil who scores below the median the chances of success with a program which requires an extra amount of work are about two chances out of five, and then only because effort and conduct are excellent. When the pupil's score reaches 120, the chances of success amount almost to certainty.

When children enter high school they are required to select a definite course which may lead to a college, technical school, normal school, or business. In many cases children desire to take a college course, who are totally unfitted either to profit by such a course or to handle the necessary preparatory work. Such children are not warranted in spending their time either in high school preparing for college, or in college, providing they barely reach the minimum requirements for entrance.

Making a careful study of the relation between the score of an intelligence test and the marks obtained by an individual in his high-school work, will enable us to prophesy the chances which the individual may have to complete his high-school work successfully.

Table I shows that Pupil No. 1 is 14 years 8 months old. In the Binet-Simon Test he showed an intelligence quotient of 99. In the Terman Group Test he received a score of 104; and in the Army Alpha Test a score of 107. The marks in his elementary and high school subjects are in his major subjects.

Number 11 in Table XXXVIII is a boy who came to one of our high schools at the age of 15. He entered from the Lyman school, which takes incorrigible cases sent by the courts. He has a bad temper and does not get along with other boys. He gave acceptable definitions for 45 words in the first column of the vocabulary used in the Stanford Revision of the Binet-Simon Test. He answered all but one question used in the Superior Adult

TABLE XXXVIII

COMPARISON OF INTELLIGENCE SCORES AND TEACHER'S MARKS

PUPIL	AGE SEPT. 1	I. Q.	NAT. INTEL. TEST	TERMAN TEST	ARMY ALPHA	GRAMMAR SCHOOL MARKS	HIGH- SCHOOL MARKS
1	14- 8	99	—	104	107	B A B	C D C E
2	15- 6	82	—	76	85	C C D	C D C E
3	13- 1	107	141	68	95	C C C	C C C D
4	15- 4	87	—	59	65	B B B	D C D C
5	13-10	87	117	93	95	C C B	B D D B
6	14- 6	81	100	79	91	D C D	C D C E
7	14- 7	88	—	38	62	C C E	E E D D
8	15-10	88	—	91	91	—	D C D C
9	14- 2	100	118	100	92	C C C	B B B B
10	13- 1	97	—	59	—	C C D	D D C C
11	15- 5	118	—	165	136	—	B B A B
12	16- 6	61	—	31	—	C C D	E E E E
13	14- 7	81	110	69	59	C C D	C D D C
14	14-11	93	—	60	82	E E D	D C C D

test satisfactorily. He is now taking two subjects in addition to his regular work and is planning to take trigonometry at an evening school. After an hour's talk (and he talked very freely), it is evident that the only trouble with the boy is the fact that he never had enough to do in school. He was a boy who could have done considerably more than was required but his spare time was used in getting into trouble.

A certain boy, A. B., in one of the high schools had been taking an industrial course for three years. His work was eminently satisfactory. An older brother, however, had graduated and entered technical school. This had created a desire in A. B. to attend technical school also. He had previously tried the technical course and failed. The mother requested that the boy be tested to find out whether he was capable of doing the work of a technical school. The boy tested slightly above normal. After a long talk in which the boy agreed that he would rather be a good mechanic than a poor or fair civil engineer, it was decided that he should re-enter the mechanical course. At the last report the boy is happy and contented, doing a thing which he can do well.

A second case in the same school, a boy who remained there because his father so insisted, had an I.Q. of 79. He had failed in freshman classes for two years and was failing the first year in the sophomore class. Since giving the first test the boy has been withdrawn. The practice, however, of withdrawing a boy who is not keeping up, even though he may not be able to do so, is not a solution of the matter. The boy has a right to as much of an education as can be given. The state is insisting on more and more.

Determining mental ability for purposes of differentiating between those fitted to do the work now required at any stage of the educational program, and those unfitted to do the work, means the organizing of a suitable program for those who find the present curriculum ill-adapted to their particular needs. In determining this mental ability, an important question arises regarding the extent to which it is wise to go in our differentiation.

MENTAL TESTS AND INCREASED EFFICIENCY^{*}

BY N. F. STUMP

One of the greatest contributions that psychology has made to education is the scientific study of individual differences. All wide awake teachers are aware of the fact that all school classes are made up of children who possess potentialities of infinite variety and grade. The possession of this fact and the acquisition of methods for the objective study of these individual differences are, however, two widely different things. I hope that the following account may be of value to teachers in the future study of individual differences.

The study here presented was begun because it was found that seventy-six per cent of the students in the high school were below their ability level in scholarship in one, two, three, or four subjects: 17% were below in one subject, 21% in two subjects, 15% in three subjects and 23% in four subjects.

Purpose. The primary purpose of the experiment which is here reported was to help high school students to change themselves in scholarship from where they are to where we think they ought to be. The second purpose was to compare the measurement of achievement in school, as determined by the six-week grades, with the level of attainment that may reasonably be expected in scholastic accomplishment from pupils who possess their particular type and grade of ability. The third purpose was to present, in some objective way, to the teachers, parents, and pupils, this relationship between mental ability and actual scholastic standing in school. It was hoped, furthermore that the objective presentation of these data, by revealing to the parent and pupil any failure to accomplish what he is actually able to accomplish might improve the individual's attitude concerning his application and interest in school work, his interest in his own success and improvement.

Method of study. During Education Week the foregoing purposes were crystalized by devising a chart that would furnish us with the necessary facts. A graphic chart which represented in full the scholastic achievement attained in each subject, as indicated by the marks of the teachers in relation to the pupil's own mental rating, and in relation to the median ability of the class, together with the average scholarship in all subjects, determined

^{*} *The West Virginia School Journal*, LIII, 170-171. February, 1925.

by calculating the percentage which each student obtained in all subjects, was worked out.

It seems quite pertinent at this moment to give a rather detailed description of the graphic chart. At the extreme left of the chart there are twenty equal parts, each part representing the range in mental test scores⁶ made by each five percentile group. Each individual's intelligence score was represented on the individual card in its appropriate place. At the extreme right of the chart there are twelve equal divisions, which aided in recording the various scholarship ratings. It will be noted that these twelve divisions are used for recording the grades ranging from 60 to 93. Each one of the twelve divisions stands for a range of 3 per cent. The chart was then divided horizontally into six equal parts. In this form the chart was mimeographed and all that was then necessary was to record the various data.

After these cards were prepared for each student, one chart was used by the Principal, for interview with the students individually, and one was sent to the parents, together with a detailed description of the chart.

This is a verbatim form of the letter sent to the parents:

Dear Patron:

Since this is American Education Week I feel that it is fitting and proper that you should join us in the appreciation of the achievements of your son, ..., attained thus far during the early part of the school year.

We, as teachers, would enjoy very much to visit the home of every patron and speak to them about the work of their children, but since time will not permit doing this in all cases, we are trying to bring rather pertinent material to the parents in this way. Parents are always very welcome visitors to the school, and we are interested in speaking to you about the work of your children.

You will note attached to this letter a profile chart which is explained in detail. A similar chart is being used by the teachers, in attempting to diagnose the needs of your son. We are interested that he should accomplish the most that is possible while in school.

We are asking that you coöperate with the school and teachers, by helping your son to strengthen the weak points as indicated by the grades of the past six weeks. We all agree with the slogan: "A man of knowledge increaseth might."

Cordially yours,

(Signed by the Principal.)

⁶Terman Group Test of Mental Ability was used.

I will use the figure to show how the charts were explained to the parents. The lines that were marked red and blue on the charts sent to the parents are labeled so, on the figure.

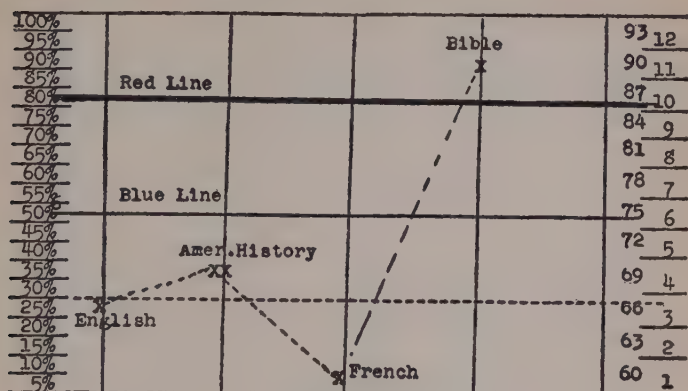


FIG. I

Graphic Chart of Superior Student Whose Scholastic Rating Is Very Low in Three Subjects

The blue line indicates the average scholarship of Juniors.

Red line—standard below which John should not fall.

The broken line indicates John's average scholarship last six weeks.

Actual scholarship in each subject pursued.

How to read the profile chart:

Find the subject on the chart, then look straight across the profile to the right, where the grade in that particular subject will be found.

It will be noted that John is below the (red line) standard in three subjects. We are trying to bring him up to the standard and if possible beyond it. It means that he should spend very much additional time on English, American History and French.

John should aim to make 89 in all his subjects.

Results. Several teachers of the Mount Hope High School informed me that some very appreciable changes in attitude have been manifest in many of the students. The attention given to

class work has increased. Many of the brighter students were stimulated and encouraged to do better work.

Pupils possessing only average ability were also encouraged, since many of them were told that they were doing excellent work, even though their achievement was not up to that of the most gifted persons in their class.

This method has enabled us to measure the results of instruction in a more efficient way. It has also aided the teachers, in pointing out individual differences among the pupils, in the various classes.

ECONOMIZING THE TIME OF THE GIFTED CHILD⁷

BY GEORGE S. COUNTS

The gifted child is apparently coming into his educational inheritance, if one may judge from the attention he is receiving in our journals. He is being told on every hand that he has been grossly maltreated, and unless we take care he will come to believe it himself. It has become the fashion to hurl polemics at the public school for its neglect of the child of superior talent. Anyone who champions his cause is certain of the enthusiastic acclamation of students of education. In many quarters it has been lamented that the educational pace in American schools has been set by the average student with the consequent sacrifice of talent to mediocrity. And in the more progressive systems actual practice is being modified in various ways to make special provision for the gifted child.

Certain concomitant advances in the field of educational science have imparted impetus to this movement and added to its potentialities for good or evil. The invention and development of psychological tests have placed a powerful instrument in the hands of those interested in the education of the more promising children. By means of these tests it is already possible in a few minutes time to arrange a group of children into a series of sections rather carefully graded from the standpoint of either ability or attainments. No longer can the gifted child escape the vigilant eye of the educator, for he is almost certain to expose himself in these tests. We may consequently regard this mobilization against the gifted child as a serious matter, since the attacking party is so well armed.

But why educate the gifted child? Or at least, why single him

⁷ *Educational Review*, LXIV, 233-244. October, 1922.

out for this special and flattering attention? What are the peculiar functions to be performed by the talented citizen in a democratic social order? How can the promising child be best prepared for the discharge of these functions? It is clear to anyone that all of these questions are fundamental and primary in any consideration of the education of the gifted child, but it must be admitted that they have received scant attention. It has simply been taken for granted that it is good to educate the gifted child more or less on the conventional lines, without inquiring too narrowly into the purposes to be served. This is due in part to our scorn of theories and theorizing, which is the natural reaction to the exaggerated theoretical emphasis of the older generation of educators. We also have an enthusiasm for a progress which is not always distinguished from change. We are a practical, optimistic, sanguine people who rejoice in movement itself without taking note of its direction. We are confident that things will be for the best. Even an American president has said that a benevolent Providence watches over the fortunes of fools and the United States. It is, therefore, not surprising that most of the discussion of the education of the gifted child has gone serenely on its way quite oblivious of certain of the more far-reaching considerations involved. But public education is a great social enterprise, and every departure in practice should be clearly and definitely related to social ends.

A technical advance in a particular direction unaccompanied by a corresponding adaptation of social controls may tend to destroy rather than conserve society. Many of the problems that the world faces to-day arise from the failure to subordinate inventions and discoveries to the larger human purposes. The very rapid development of mechanical inventions during the past century and a half has created a world for which we are not ready socially and morally. Now it is at least conceivable that psychological tests are to-day freighted with as large social significance as were these earlier inventions in the domain of physical nature. If ever used universally as they are used occasionally at present, they would be a powerful factor in determining the character of social stratification and might even bring into existence a new type of social order. We are forging a mighty instrument, which is neither good nor evil in itself, but which becomes either the one or the other according to the uses to which it is put.

Let us see just what form this special attention to the gifted

child is taking. At least two tendencies may be observed in recent experiments. One looks backward, the other forward; one means a more or less complete return to the individual instruction of a century or more ago, the other a further extension of the notion of group instruction through the classification, into sections of relatively homogeneous ability, of all students pursuing a particular subject or belonging to a particular school year or grade. Since the latter plan apparently has some chance of wide acceptance in schools of at least moderate size, and since the rapid increase of population and the improvement of means of communication mean a diminution in the importance of the small school, where the return to individual instruction is possible, the discussion in this paper will center around the practice of homogeneous grouping, although much that will be said will apply to any effort to make special provision for the promising child. This plan, of course, involves the segregation of the gifted children from those of mediocre and inferior talents. For them the methods of instruction are changed somewhat to secure adaptation to a superior intellectual type; the course of study is usually enriched and deepened; and some provision is made for acceleration or more rapid promotion.

It is not surprising that this proposal of breaking the ordinary class up into several groups for purposes of instruction has evoked considerable and even heated discussion. The opposition has styled this practice undemocratic, because of the separation of the superior child from the mass. Our faith in the common man is thought to be repudiated through the double action of such a scheme. The individual of talent is exalted, and the stamp of inferiority is placed on the great majority. This has been interpreted as at least reminiscent of a social order in which the masses are subordinated to an aristocracy, a conception that has always been *anathema* in this country and which is certainly contrary to the spirit of our institutions. It is feared that the separation of the gifted child from the mass of children will promote class distinction and develop antagonisms. Furthermore, it has even been maintained that the according of special attention to the gifted child is contrary to the fundamental conception of equality which, as an abstract notion, is dear to the hearts of many Americans. The extension of educational opportunity, so it is suggested, should bear an inverse rather than a direct relation to native talent, in order to diminish the inequalities of nature. The superior indi-

vidual does not need the advantages that education can give in order to be successful in the struggle of life, while the individual handicapped by nature is dependent upon them. Numerous other objections have been raised to any plan involving homogeneous classification with special attention to the gifted child, but these two alone are pertinent to our discussion.

The arguments advanced in favor of such a plan are likewise many, of which we shall mention but two. It will be observed that they also are so stated as to appeal to the prejudices of our people. The doctrine of equality is again brought into service, but now as the doctrine of equality of opportunity. Every individual should be given the opportunity of developing his talents, so the argument runs. Consequently in each case education should be adapted to the needs and abilities of the individual, and since the gifted child has superior talents he has a right to superior and more extended educational opportunity. The position is also frequently taken that it behooves society to give special attention to the gifted child because of the greater returns that may be expected from the expenditure of a given amount of educational energy. With the limited resources placed at our disposal for educational purposes it is the part of wisdom to apportion those resources so as to secure the largest possible return; and, as in agriculture we till our more fertile soils first, so in education our first and largest expenditures should be on the gifted child.

In each of these arguments, either for or against the giving of special attention to the education of the gifted child, there is something of truth. But in the main they are either superficial or inadequate. The problem is not grasped in its entirety. There are appeals to prejudice and even a certain blindness to facts. Those who oppose this departure do not realize its possibilities for good, while those who favor it are apparently unmindful of the size of the undertaking to which they are committed and of the difficulties to be surmounted. Our real task is that of utilizing an invention without sacrificing human values.

Let us, therefore, return to the question about which this entire question revolves. Why should special attention be given to the education of the gifted child? Certainly not because of any natural right to special privileges. Before the law and in the moral order we do not recognize inequalities. There is nothing sacred about the gifted child, nor is his education an end in itself that finds justification without external reference.

It is also clear that in a system of schools maintained through public taxation the only justification for unusual attention to any group, aside from a natural and laudable concern from humanitarian motives for the welfare of the peculiarly unfortunate, is to be found in the return that society may expect from such attention. As pointed out in an earlier paragraph, the individual of superior gifts is the best possible social investment. The truth of this statement, coming from those favoring the development, is apparent to even the most prejudiced. And it is undoubtedly for this reason that there is so much interest to-day in the education of the gifted.

But it is not clear that education in the accepted sense when applied to the gifted child necessarily means a social gain. The mere enriching and deepening of the curriculum will not automatically produce the result desired. Unless superior gifts are linked with a strong sense of social obligation, their possessor is a menace rather than a blessing to society. Add to superior gifts superior educational advantages and the danger to society becomes the greater. The need of society to-day is not only a more thorough development of the special talents of its members, but also, and perhaps even in larger measure, the dedication of these talents to some social purpose.

As educators we would be rendering a disservice rather than a service to society, if we should promote an educational innovation that would increase the power of its more capable members without at the same time making them more sensitive to the common good. Few societies have lacked talent, but in many that talent has been devoted to predatory purposes. It is probably this fact more than anything else that lies at the base of many of the objections to making special provision for the gifted child. There is a suspicion that the individual will forget his benefactor and turn his superior training to his own advantage. And who will say that this suspicion is not well-founded in a society in which profit rather than service is the dominant note of industry? Not infrequently the self-seeking individual has ascended to a position of power and influence and even respectability through ruthless disregard of all social obligation and the pitiless exploitation of the lives and fortunes of those weaker than himself. Certainly an educational system maintained at public expense should mitigate rather than foster these egoistic tendencies of gifted persons. This does not mean that opportunities for the ex-

pression of personal initiative will be denied the individual, as many superficial critics maintain. There is ample opportunity for the utilization of every bit of enterprise which the population possesses in efforts to gain more complete mastery over the forces of nature, and to abolish ignorance, poverty, disease, crime, social and race antagonisms, and vulgar and obscene appreciations. Some identify initiative with predatory activities, because so much of human energy has been turned in this direction. There is no place in a democracy for the notion that the powerful have the divine right of exploitation and that the weak exist primarily to serve them.

There is growing reason for apprehension on this score in society as we know it to-day. Observe the effects of that process of urbanization and industrialization which has especially characterized the development of western civilization during the past century. Every succeeding census reports an increase in that proportion of our population living in the great industrial centers. In these centers the small virile community of intimate personal contacts and homogeneous interests has disappeared. Here we see the segregation of individuals into comparatively isolated groups according to talent, interests, or fortune. This constitutes a grave danger to social stability and welfare. Those gifted individuals who in an earlier generation would have occupied positions of leadership in their respective small communities, identifying themselves with these communities and being more or less concerned about the fortunes of every member, are to-day in the modern city associated together in a group of their own and have only remote and impersonal contacts with those of more humble talents. Feelings of class distinction, consequently, are appearing on every hand. The superior individual is loyal to his own group, sanctioning and defending an exploitation of the less favored members of society that he would not have tolerated in the little community. Thus in the great industrial societies of modern times there appear certain difficulties in securing that whole-hearted devotion to social amelioration on the part of the more gifted members which are not encountered in a less highly differentiated social order.

From the foregoing it is clear that the education of the gifted child is laden with serious consequences. Such a program should not be entered upon light-heartedly and according to the best traditions of American optimism. It is a matter of supreme concern, not so much to the individuals of superior gifts as to the

rest of society. The entire population must be educated regarding the nature and social significance of individual differences. This will require the revision of certain of the traditions of our people and the development of others. Not only must we adjust the curriculum to the talents of the individual, but, what is just as important, we must also provide for the development of attitudes and ideals that will draft human knowledge and energy into human service.

The popular notion of equality must be revised. In so far as native endowment is concerned, inequality rather than equality is the first law of nature. Enormous differences are found in the case of every measurable trait, and no society can afford to close its eyes to this fact. A stable and worthy civilization must recognize the truths of science in every field. That one man equals another in physical strength, in the manipulation of arithmetical combinations, or in the ability to organize and conduct chemical research, is of course ridiculous. Nothing but evil can flow from the denial of inequality here. On the other hand, that men are equal before the law and that they are of equal worth in the moral order are notions that constitute a priceless social heritage and to which we should hold with tenacity. But we merely play into the hands of the enemies of society when we confuse the latter with the former sort of equality. Equality before the law and in the moral order are not objectively given, but rather are ends to be attained; and they can be attained only by the recognition of inequality in the realm of nature.

Because of this mistaken notion of equality, we have been reluctant to admit the existence of the individual of superior natural gifts. It is a point about which we have been sensitive, actually fearing perhaps to acknowledge that through no act of his own a particular individual may be born into the world with either a robust or feeble physical inheritance, a stable or unstable mental constitution. We have consequently maintained a tradition that any ordinary individual can perform the duties of a political office, whether it be that of city mayor, police commissioner, or postmaster. Place must be made in our traditions for the gifted citizen.

Our failure to recognize natural inequality makes impregnable the position of the gifted individual who uses his gifts for the purpose of exploiting the weaker members of the community in a perfectly legal way. He argues that all men are created equal, that

each individual therefore reaches that position in society to which his industry and character entitle him, and that his own superior position is merely the expected reward of a life regulated by the virtues. He maintains further, and with some pride perhaps, that he is a "self-made" man, and that any other individual, willing to make the sacrifices that he has made, could as easily ascend to his position. Thus, while exploiting those less favored than himself, he applies as a balm to his own conscience the very doctrine of equality that he finds perpetually in the mouths of those he exploits.

It is clear, therefore, that we need not only a revision of the popular notion of equality, but also of the attitudes towards inequalities. Our attitudes are derived from the assumption that differences in achievement are due essentially to moral factors. If an individual is born with a meagre intellectual equipment, we act as if he had committed some abominable moral outrage, and must suffer the consequences. On the other hand, the individual of superior gifts is encouraged in the belief that they are the reward of fortitude on his part, to which he has a moral right. The fact is that the first is unfortunate and the second fortunate by nature. There is no moral factor involved in either case at least in so far as the individuals themselves are concerned. We no longer think of condemning a man because he has been struck by a thunderbolt, overwhelmed by a flood, or visited by smallpox. We regard him as a fit subject for commiseration. Likewise, only in the most benighted of communities is it customary to accuse the blind, the crippled, and others suffering from physical defect or misfortune. It is time that we should endeavor to develop attitudes towards psychological traits that have now become common in the physical and physiological realms. The inheritance of a superior mental equipment should be less a cause for pride than for thankfulness. Individual differences are a part of the plan of nature and as such they should be recognized.

There is one additional point that deserves attention in this discussion. The special treatment of the gifted child is necessarily associated with some form of educational guidance. When this guidance is uncritical, as much of it is to-day, we have additional cause for grave apprehension. The opinion is not uncommon that it is a serious waste of talent to permit an individual of superior mind to engage in the more common and humble callings. The argument, which has a certain appearance of cogency, runs some-

thing like this. Since it requires but a mediocre grade of intelligence to make a successful carpenter, no individual of superior intelligence should be permitted to enter this calling. Indeed, it is argued, it would be dangerous to allow such a thing to occur, because the individual of superior mind would not be content as a carpenter and consequently might as an agitator promote unrest and general dissatisfaction within the industry. Furthermore, the converse to the above proposition is also accepted as good doctrine, namely, that all persons intellectually gifted should be definitely prepared, by means of the higher education, for those professional and managerial occupations required by the established order in which success is conditioned on the possession of a high grade of intelligence. This notion of arranging all occupations in a graded series according to the intelligence quotient demanded for success and then guiding all individuals into the occupations that correspond to their own intelligence levels, is an attractive one and is certainly serviceable, but it has its limitations and even dangers. In its negative aspect it is sound. An individual should at least not be encouraged to enter an occupation requiring an intelligence level in all probability higher than he possesses. But that the principle should be applied in the other direction by excluding from the lower occupational levels all persons of superior intelligence is doubtful.

The point that the enthusiastic advocates of this program of guidance overlook is that the direct demands of the vocation are not the only demands made on those engaged in it. They assume that the present industrial order is fixed and that the compensation, conditions of labor, and social status of the various occupations are determined by some immutable natural law before which individuals and classes must bow. Either this, or that we are living in a non-competitive industrial order in which no group can or will promote its own welfare at the expense of others. But few indeed would hold to either of these views. We realize fully that, if the position of the more humble occupations is to be raised, if the lot of the common man is to be ameliorated, it must be done in considerable measure by those engaged in these occupations, by the common man, under devoted leadership. Consequently there is need in each calling, however humble, for a limited number of individuals of high intellectual and moral gifts who may aspire to and occupy positions of leadership within their own class and thus lead that class up into a richer and fuller life. It is folly to expect

this to be accomplished entirely by individuals belonging at the time to the more favored classes, at least until social obligation is taught much more effectively than it is taught to-day in our schools. History records few examples of the emancipation of one class by another. Thus, if through a system of guidance, we should drain out of the less fortunate classes all the superior talent born to them, we would deprive them of that leadership necessary to their salvation, close the door to the general improvement of the condition of these classes, and make it possible to rivet upon them a system for their more complete exploitation.

The history of rural life in the United States gives us a splendid illustration of what to expect from the operation of this principle of guidance. Here the school, along with other agencies, has selected the more promising children and directed their attention away from the rural community towards the higher education and urban life. From generation to generation this selective process has gone on until to-day in certain of the more long-settled regions the rural population exhibits a serious lack of that intellectual vigor and those qualities of leadership which are necessary to the development of a superior rural civilization. This continued withdrawal of the more gifted strains from any section of the population is bound to produce the same result. If our desire is to create in this country a docile, servile, obedient proletariat, surpassing in these respects anything the world has yet seen, lacking in all the virile traits and incapable of effective protest, we can do no better than promote that type of educational guidance that seeks to remove from the ranks of the less favored classes all individuals of superior gifts. To some there is nothing abhorrent about such a social order, but it would hardly find a congenial atmosphere among American traditions.

Our conclusion, then, is that special attention should be given to the gifted child, that on him particularly should society lavish its educational opportunities. The justification of this unusual extension of privilege, however, is not to be found in any superior rights to which the individual of promise is entitled, but rather in the large social values involved. The gifted individual is not sacred, although his gifts are, and so he should be taught to regard them. It is the chief function of the educational system to convert every normal child from a social liability into an asset, and the greater the gifts of the child the more necessary this is. The gifted citizen who recognizes no social obligation is much more

dangerous than the ordinary criminal of mediocre or low-grade intelligence. Consequently the education of the gifted child should insure above everything else the development of a strong sense of social obligation. Otherwise such expenditure involves the misappropriation of public funds and, more than that, the actual subversion of these funds to anti-social purposes. It is particularly necessary in the complex world of to-day, cut across, as it is, by class and race divisions and violent antagonisms, to bind the individuals of talent to the service of the larger human purposes.

Principles involved in effecting economy of time in education. Economy of time together with no loss in the total education can be effected by continued improvements in the quality of teachers, selection and organization of curricula, promotion plans and articulation between administrative units. Such economy of time is in reality a *better use of time*.

Loss of interest and energy result from a long preparatory period of unmotivated study.

The fundamentals of education can be acquired in less than eight years.

Children require differentiated training by the age of twelve.

Excessive expenditures of time for review over-emphasize the importance of subject matter at the expense of the development of pupils' "ability to go alone" intelligently. This principle is intended to encourage well-conducted and well-organized drills and reviews.

The term *cultural training* must be redefined from time to time "in terms of the value of the individual in the industrial and social scheme." Such a redefinition of culture should lead to a balance between the time and effort expended upon efficiency, culture, and character.

"Education must be in harmony with its environment, but it must develop also original power to change the environment and to cope with whatever problems of efficiency and ethical conditions a given period may present."

Experiments show that "to economize time it is required that

the right persons, under the right leaders, shall use the right material, at the right time, and in the right way." This principle emphasizes the importance of the following conditions:

Better conditions of pupils.

More definite and attractive immediate as well as remote goals.

The organization of courses pertinent in content and psychological in sequence.

Wise, more tactful, sympathetic teachers.

A devoted, industrious, and cheerful student-body.

A more complete elimination of distractions.

Timely beginnings of all the activities pursued.

Adequate diagnosis and proper classification of pupils.

Adequate training for one group of pupils should not preclude adequate training for all groups.

The greater the talents of a child the greater the need for his adequate training.

Society needs an educational system which will train thoroughly the special talents of all its members and dedicate these talents to high social purposes.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. For what purpose or purposes is it advisable to economize time?

2. Of what value to prospective professional men and women would a saving of one to three years be?

3. If you doubt the advisability of reducing the length of time spent in training for professional vocations, how then can economy be so effected as to make professional training more efficient?

4. By what means can economy be effected without lessening the value of the courses or lowering the standards of attainment?

5. To what extent are the assertions made by Eliot in the eighties still true?

6. What subjects does a twelfth-grade pupil study in each of

the following countries: France, Germany, England, and the United States?

7. Test as to their validity the principles in the selection from the report of the committee on Economy of Time. Have these principles been accepted as guides by school administrators?

8. How is economy of time effected by a reorganization of the school if twelve years of schooling are still required before entering college?

9. Show how adequate student-accounting can aid in the economizing of time.

10. How can standardized tests be used to economize time?

11. Why should special attention be given to the education of the gifted child?

12. What specific educational opportunities are required for the adequate training of gifted children in such subjects as mathematics, English, science, or civics?

13. Find evidence in support of the principles at the end of this chapter.

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CHAPTER XIII

THE REORGANIZATION OF SECONDARY EDUCATION

How much time for the elementary school? Do Americans require a longer period of elementary training than Europeans do? As pointed out in Chapter IX, European practice favors a relatively short period of undifferentiated, elementary school training. In the case of foreign pupils who are destined for secondary education, this period ranges from three to five years. Only in the case of the foreign pupils to whom the secondary school is closed, does this period cover as many years as it has covered in the traditional American elementary school. Also, it was found in Chapter XII that well-informed educators of this country maintain that the amount of instructional material to be mastered by American children during the old eight-year school can be mastered in seven years if America will provide herself with as skillful teachers as Germany has had for half a century.

Furthermore, America has developed elementary schools of different lengths in different parts of the country. In New England the nine-year elementary school has been common, while northern and western states have found eight years adequate for elementary training, and the South has managed to succeed with only seven years. That certain parts of the nation should require nine years to do that which can be done in seven years by schools in other localities indicates a lack of economy and a need for reorganization. This need was made emphatic by Brooks who canvassed the actual practices of seven-, eight-, and nine-year schools.¹

¹ E. C. Brooks. *Seven, Eight, and Nine Years in the Elementary School. Elementary School Teacher*, XIV, 20-28 and 82-92. September and October, 1913.

This canvass showed great diversity in planning the divisions and activities of the school day and in promotion plans. The diversity led Brooks to say that school practices within certain states as well as among all the schools canvassed are as different as though the reports had come from different nations with different purposes and ideals.

Investigations have been made to find out whether there is a difference in the proficiency of pupils who have finished elementary schools of different lengths. In conducting an investigation of this kind, Melcher ² found it necessary to distinguish between the alleged length of the course and its real length. He found that representative seven-year school systems require on the average 7.32 years for completion and that eight-year systems require 8.25 years. By the application of certain measures of proficiency, Melcher found also that the scores of the elementary school pupils of Kansas City's seven-year system are "generally equal to or slightly above the average scores of other cities on the same test." ³ He found also that when the graduates of that school system enter universities they achieve standings which are slightly superior to the average grades of university students. The report of this investigation closes by pointing out additional advantages of the seven-year system as compared with an eight-year system: the seven-year system retains a higher percentage of pupils until completion of the elementary school; ninety per cent of these pupils enter high school; 30.4 per cent graduate from high school; 57 per cent of the high-school graduates enter college; the seven-year system raises the educational level of the whole community a year or more; this system reduces the cost of elementary school education about \$83 per pupil who completes the seventh grade; and children who must leave school at fourteen have one year's

² George Melcher. Time Required to Complete an Elementary School Course. *Bulletin of the Department of Elementary School Principals*, III, No. 3, 138-160. April, 1924. Published by the National Education Association.

³ *Op. cit.*, p. 154.

training in advance of what they could obtain in an eight-year system. In reporting upon the University of Chicago elementary school of seven years, Morrison comes to somewhat similar conclusions as to the effectiveness of a seven-year system.^{3a} These investigations indicate that there is no particular virtue in the period of eight years as the optimal length for elementary schools. Such investigations indicate some of the reasons why it is desirable to reorganize American schools instead of allowing them to continue in the same state of organization in which, by chance, they now find themselves. The readings of this chapter look toward such reorganization.

THE MEANING OF SECONDARY EDUCATION⁴

BY CHARLES H. JUDD

The student of American educational institutions finds himself very much confused when he attempts to discover the points at which the typical high school begins, and the point at which this middle school ends. There are many high schools in this country which carry on courses that in other communities are thought of as belonging to the elementary grades, and it is well known that many of our American colleges are in fact high schools in every respect except in name. The overlapping is evident in such details as methods of organization and subject-matter of instruction. Take such a characteristic as departmental instruction. In the high school and upper schools all instruction is departmental, that is, the work of the mathematics department differentiates itself with great clearness from the work of the English department and from that of the Latin department. The tendency to adopt this mode of organization has of late appeared more and more in elementary schools, especially in the upper grades. In defense of this mode of organization in the elementary school, it has been pointed out that departmental classes give greater freedom of adaptation of school work to individual needs. Departmental classes permit students, for example, to go forward in certain lines, even

^{3a} H. C. Morrison and others. *Studies in Secondary Education*. Supplementary Educational Monographs, No. 24. The University of Chicago, 1923. Pp. 11-17.

⁴ *The School Review*, XXI, 11-24. January, 1913.

though they may have failed in others. Departmental work also makes it possible for students to elect to some extent those courses which are best adapted to their future work. Again, it is said that the instruction is more efficient because the training of the teacher and the interest of the pupil are more highly specialized. In these and other respects the upper grades of the elementary school are supposed to gain by approaching the type of organization typical of the high school.

On the other side, if we examine the college course, we find that there is great similarity between the work of the Freshman year and the work of the high school. This is perhaps most strikingly illustrated by reference to the subjects of instruction. There is not an American college in existence which does not offer elementary work in modern languages, elementary work in science, elementary work in history. More and more there is a tendency for the colleges to offer elementary work in classical languages. Greek has been almost entirely carried over to the college. Even the elementary phases of Latin are now being offered in many colleges. It is difficult to determine how far this tendency will extend. Without waiting for future developments, however, we are compelled, even at the present time, to say that the Freshman year of all American colleges is just as much a stage of secondary education as is the work that is carried on in high schools.

In Germany one of the chief marks of distinction between secondary education and higher education is to be found in the fact that the secondary student is put through a required curriculum, while the student in the higher schools, especially the universities, is allowed to elect freely the courses which he wishes to pursue. In this country we have experimented extensively with the required and elective systems. It is perhaps bold to make any statement about what is generally accepted in the matter of elective courses, but there seems to be a tendency to mark off the immature student of the high school and the first years of the college from the mature student of the later college years. One may venture the statement that it is characteristic of the high-school period that the student must be carefully supervised in his selection of courses, and must be guided into those courses which form a coherent curriculum. It is certainly the prevailing experience of colleges that the Freshman and Sophomore must also be guided in his selection of courses. The free elective system is successful with advanced students in the Junior and Senior years of the col-

lege, but it is certain that the Freshmen and Sophomores are not yet prepared to elect without careful supervision and guidance. In this respect, therefore, it is obvious that the first two years of college and the high school are parts of the same general period of education.

The intimate relation between the high school and the institutions above and below is so vital a fact in American education that many movements have sprung up in different parts of the country looking toward an extension of the high school in one direction or the other. We find many high schools which induce students to stay on for work after they have graduated. These institutions are developing in the direction of what is now classified as college work. On the other hand, we find that many of the schools which aim to do secondary work as their primary function find it necessary to have a preparatory class for students who come from elementary schools which are inadequately equipped to give a complete training in the so-called common branches.

Perhaps the most significant extension downward of the domain of the secondary school is that which is coming in response to the demand for vocational education in the lower schools. Children who are not sure of going to high school must be allowed to pursue differentiated courses in the upper grades of the elementary school. The boy who is going into the trades and has no thought of high school cannot with equity be required to do the same work that is required of the boy who is going to become a clergyman and looks forward to a college education. Many boys have to make a choice between the trades and professions before they leave the seventh grade. The seventh grade must provide for such boys by adopting a type of organization similar to that now established in the high school.

The facts which have been pointed out thus far show how vague is the present definition of secondary education. They also challenge us to a thoroughgoing consideration of what is to be done in order to direct intelligently the evolution of our American school system.

I am going to venture to make the next part of my paper as concrete as possible, by referring in detail to the school with which I am best acquainted, namely, the Elementary School and the High School of the University of Chicago. These two schools differ in some respects from the ordinary schools of like grade, but

we are prepared to defend the thesis that what we do could be advantageously considered by all elementary and secondary schools. The schools are the laboratories of the Department of Education, and the business of the department is to understand as fully and immediately as possible the opportunities of economy and co-ordination of organization.

Let me begin by commenting on the problem of organizing the English in the two schools, so as to avoid unnecessary duplication. It was found that the upper grades of the elementary school spend much time in reading some of the classics, and in studying the elements of correct composition. Most of this was repeated in the high school. Thus we had going on under our own roof work so repetitious that a child who went through the two schools repeated in the first year of the high school much that he had done in the elementary school. There is nothing so destructive to a child's interest as the thoughtless repetition in which our schools indulge. We who are older in years and patient in mind would refuse to listen to the same sermons gone over again and again. But we seem to think it our duty to make children go over the same poem or story several times. The conscientious child reads the poem at home. He comes to class and hears some other child read it. The teacher then reads it. The conscientious child now reads it again, in review, and takes an examination on it. He goes on into a higher school and a new teacher takes him in hand and announces with great enthusiasm that now this same poem will be read and studied. "Please read the poem several times at home before coming to class tomorrow!" When tomorrow comes the poem is once more read by someone, as though it had never been read before, etc., etc. One parent said to me not long ago, "My boy is now reading and studying the 'Ancient Mariner' for the third time. He read it in the eighth grade, he read it in high school, and now his class in college is taking it up!" Is it any wonder that we find students more intelligent about the working of our elective system than are we ourselves? Think of three teachers of English managing the destinies of a boy and the interests of the "Ancient Mariner" absolutely ignorant of the sphere of each other's work and influence.

We found in our schools that a little consultation between the English teachers brought out enough of these repetitions so that we were able to eliminate one year of English. We put the chil-

dren who had done our eighth-grade English directly into second-year high-school English.

We found a similar situation in science. In common with the better elementary schools, ours has introduced a good deal of science work. In the first year of our high school we are giving a general science course. This we believe in keeping with the best practices. Yet there is a lack of co-ordination here. We encountered some embarrassment in dealing with two types of students who enter our high school. There are those who come to us from schools which have very little nature-study. For such students a general first-year science course seems to have many advantages. For other students, especially those who come from schools teaching much nature-study, this first-year general course is very uninteresting, because it is so repetitious and elementary. What shall be done? The remedy seems simple, but it requires the intelligent co-operation of two schools. Let the elementary school administer much general science, let the high school take up the specialized sciences and give the student more systematic differentiated courses.

A third illustration may be drawn from our experience with language instruction. For a number of years the elementary School of the University of Chicago has offered to students in the fourth grade and upward the opportunity of electing a modern foreign language. The student may take either French or German. Whichever language he elects, he will pursue this study during the remainder of his elementary-school course. He does not have each day as long a period of study as he will have when he comes later to take up the same subject in the high school. He does not undertake to do the same kind of work. For example, he does not, in the elementary course, emphasize grammatical study. He does, however, acquire the ability to pronounce the language at a period in life when it is easier for him to take on the pronunciation of a foreign language than it will be when he grows older and more fixed in his methods of pronunciation. We regard the courses in modern language as very desirable in the Elementary School. It was found difficult, however, to take advantage of the work which the children had done in the Elementary School, when these children came to the High School. The instructors in the High-School department did not know exactly what had been done in the lower grades, and the methods which had been pursued in the lower grades were not identical with those which were used in the

High School to train up introductory students. As a result many of the children who had spent four years in the Elementary School in studying modern languages were obliged to begin the work as though it were entirely new on entering the High School. This showed, of course, that there was no proper correlation between the two institutions. Gradually an arrangement has been worked out which has led to some modifications of the methods of teaching languages in the Elementary School, and to a very large modification in the attitude of the High-School instructor; with the result that the children now get the advantage of the work which they have done in the Elementary School. There has been absolutely no loss or omission in their education, but there has been such a recognition of the good results of the work they have done in the Elementary School that the High School can begin its work at a higher level. Credit, if one wishes to put it that way, for a year of high-school work, can with all propriety be allowed to these children. They have done the same work that is expected of others who begin the language in the Freshman year of the High School, and they are amply qualified to go on with the higher studies in these same fields.

The problem of dealing with mathematics is somewhat more difficult, and yet it is perfectly clear to all who have been interested in the problem of organizing mathematics in the elementary and high school that a very radical change needs to be made. The elementary school certainly has the right to include in its course a great deal more constructive geometry than has heretofore been common in the elementary course. The elementary school also has a right and duty to include some of the simpler algebraical methods of procedure. The use of the simple equation, the use of the unknown quantity, can readily be taught in the grammar grades, and the ease with which these devices make it possible to solve many problems that heretofore have been solved by cumbersome arithmetical methods justifies the introduction of algebra into the elementary school course.

I need hardly emphasize the importance of effecting economies of the type which have just been described, wherever such economies are possible. The pressure which is felt throughout our whole civilization for economy of time in education, certainly has commanded enough attention in recent years to be worthy of the closest attention on the part of teachers. If we can save a year of the time of elementary pupils, and bring them into the

secondary school at a period a year earlier than is customary, we shall have helped to solve the urgent social question which confronts all educators.

I have illustrated my remarks by reference to our schools, but I believe the same general plan is coming in all schools. Elementary-school teachers are convinced from their experience that there is at some point in the elementary course a waste of time and energy. There is a great deal of undue reviewing in the seventh and the eighth grades. Teachers in the seventh grade review at the end of this year in the hope that their pupils may be better prepared to go on with the work of the eighth grade. At the beginning of the eighth grade there is a long and laborious review of what has been done before, and finally, at the end of the eighth grade, there is a long period of preparation for the work of the high school. All this reviewing is wasteful. There ought to be a continuous review of the work which the children have done in earlier years, by a constant revival in ordinary routine of the principles and information which have been acquired in the earlier years. There ought never to be the necessity of a long period of review, such as is too common in our schools at the present time.

I find support for the doctrine which I have been defending in the fact that such schools as those of Concord and Berlin, New Hampshire, are making an effort to differentiate sharply between the elementary school and the high school at the end of the sixth grade. These experiments exhibit a clear conviction that the seventh and eighth grades as now organized are not satisfactory. Furthermore, in personal conference with many teachers in these grades I find a widespread feeling that the reviewing to which reference was made above is not justified. It may be that the Concord plan is the best one. There are, however, two different issues involved in the matter. First, there is a matter of actual economy of time; the second problem is the problem of better organizing the work.

Thus far I have dealt with the problem of the high school and its extension downward. Let us turn now to the problem of extending the high school upward.

The discussion will, I believe, proceed from this point most clearly if I lay down a definite program of organization and attempt to defend this program. I am sorry not to be able to offer a concrete case where the program has been carried out, as I was able to do in dealing with the relation between high school and

elementary school. The program which I wish to advocate is the fusion of the first two years of the college with the high school. The work which is now done in six years, that is, in four years of high school and two of college, can under proper organization be completed in five years. For convenience I shall speak of this five-year school as a secondary school.

It should be noted again that the subject of discussion at this point is economy of time. Assuming that no radical change is desirable in the general course to be following by a student, there is a possibility of economical organization. The first year was saved between the elementary school and the high school; a second year can be saved between the high school and the college. When the waste in our present system is eliminated then we shall be in a position to work out readjustments of a broad type in the content of the course. The program which is now to be defended is a program of economy of one year between the high school and the college.

The first argument which I wish to present is somewhat indirect. Students who go to college under our present plan are often mentally and socially immature. The shock of readjustment is very great, and many a student loses much time and energy in the radical change in his habits of life and study. Society has recognized this fact and has attempted to make the adjustment as easy as possible for the immature student by keeping him for the first years of his college work as near home as possible. The most striking fact which has been brought out in recent investigations is that American colleges are local institutions. The colleges of the great universities are local and the small colleges are chiefly justified in their struggle for existence by the fact that they bring the advantages of a complete education to boys and girls who could not go far away to attend college. The defense is valid, because a local institution is likely to save the student from some of the dangers of readjustment. Why not extend the advantages now provided here and there to as wide a range of people as possible? If the local college does a service when it provides that a group shall enjoy under favorable conditions an extension of high-school training, why not make the advantages of such an extension accessible to all children through an enlargement of the local institution best fitted to carry on this work? Strong public high schools ready to do the work of the Freshman and Sophomore years are the right and duty of every community. They exist to-

day in a form which calls for very little enlargement, in all the leading centers of population in this country.

It may be said that the plan which is proposed will only put off the day of readjustment. The student going from the enlarged high school will still be obliged to meet new and exacting conditions in the higher university to which he goes. True, there will have to be a readjustment, but it will be relatively easy because the student will be more mature and more fixed in habits of concentration. Furthermore, the later years of college work are more flexible and the adjustment will be easier because the student who elects his courses with some definite end in view, will not have to repeat at the arbitrary demand of the Freshman instructor the English and the science and the history which are now regarded as necessary to complete a general education.

The second argument against our present organization is much more direct. Consider the educational waste and lack of co-ordination which is exhibited every year, when colleges admit students with conditions. A student admitted with conditions is a living evidence that secondary education is to be completed in the college under a system of instruction which is not frankly and fully organized for that purpose. A college which accepts such a student is saying something like this: "The subject in which you are not prepared is indeed stated in our catalogue to be a logical and necessary preliminary to our higher work, but we are a good deal in doubt about the truth of what is said in our catalogue. If you will consent to take the major risk, and let us remind you from time to time that you are probably unable to do our work, we will accept your tuition and admit you to our classes and undertake from now on to organize your course." It would be most wholesome for college faculties to go into the details of the cases of conditioned students. Sometimes the fact is that a conditioned boy is strong in mind and body. Perhaps he discovered in high school that he has a future. He will be an honored alumnus of any college that knows enough to let him in. Why talk about him as conditioned? Why not say frankly that his training of the secondary or general type is incomplete and frankly provide that he shall take first what he needs, namely, training of a secondary and general type? The trouble now is that we talk as though his secondary training were completed; we let him into the college family, and keep reminding him that his adoption is of doubtful legality and of uncertain wisdom.

Another type of conditioned student is he who is not strong in mind or body. He is let in and told to make bricks without straw. He is known to be unequipped with the rudiments, and is confused and worn out. He must meet at the same time both the usual requirements of regular work, and also the requirements growing out of his unpassed entrance requirements. His confusion blossoms into mental chaos, and then our educational machine cuts him off. When will colleges realize that an inadequately prepared student, inadequately taken care of in his first year, and ejected with all the pomp and the circumstance of a faculty vote, is an evidence of institutional imbecility rather than of student failure?

We have reached a period of rapid expansion of our secondary schools; can we not see broadly enough to organize these great institutions so that they shall comprehend all that belongs within a single scheme of secondary education? I believe we can and shall. The secondary school ought to reach down and take the child who is now wasting time in the eighth grade. It ought to expand so as to give instruction to the immature students who are now working in the first two years of college. It ought to render the whole organization so much more economical than it is now that time shall be saved for the student, while at the same time the course is greatly enriched.

ENLARGING THE AMERICAN ELEMENTARY SCHOOL ⁵

BY W. C. BAGLEY AND CHARLES H. JUDD

A short preface will serve to indicate the origin and purpose of this article. Its authors have from time to time found themselves in disagreement with regard to the junior high school. Deliberate consideration of the points of disagreement convinced them that there are certain fundamental educational principles involved in the organization of the seventh, eighth, and ninth grades to which they can both unreservedly subscribe. They have thought it desirable that a joint statement of such fundamentals be drawn up. The following article is the result. They are prepared to share alike responsibility for every statement in this article.

There can be no doubt in the mind of any careful student of education that there are important changes going forward in

⁵ *The School Review*, XXVI, 313-323. May, 1918.

the seventh, eighth, and ninth grades. These changes are related in many ways to the fact that much greater numbers of pupils than ever before in our school history are passing through these grades. The time was, before the studies in retardation, when the number of pupils who reached the eighth grade was comparatively small, and the entering class in the high school contained so small a percentage of the pupils who entered the eighth grade that the matter of the transition was a much less urgent matter than it is today. Now school officers are making every effort to carry pupils forward as far and as fast as possible, and the course of study and the organization of the grades are being worked over with a view to keeping pupils in school. The efforts of teachers and principals are being reinforced by social agencies outside the schools. The improvement in the economic condition of the people in this country has increased the ambition of families that their children should go to school beyond the elementary grades and has made it possible for children to prolong the period of their schooling.

It is needless to review in this connection the enlargements of the high school which recent years have witnessed. The facts are well known and too impressive to be forgotten. From the high school downward as well as from the elementary school upward there has been a reaching across the gulf which in former days was set between the eighth grade and the ninth grade. And it is well for American education that this should be so.

The improvement in relations between the eighth and ninth grades has served to emphasize the importance of the fact that our school system is in theory and is coming to be in practice a continuous opportunity for every pupil. Any movement which makes for ease of transition from one grade to another should be applauded. Any agency which sets up a barrier to divide one grade from another is to be condemned without reserve.

The first principle, then, which we reach in our consideration is the principle that all organization within the schools should be judged as appropriate to the American system of education just in the degree in which it makes for continuous and uninterrupted opportunity for every pupil.

The second general principle is closely related to the first. Within each school unit there has been and is appearing in still larger measure an enrichment of the course of study and of the opportunity offered to the pupil. This tendency shows itself in

many different ways. The school year in American schools has been lengthened. The teachers are better trained each succeeding year. There is a better and broader collection of textbook material; school buildings are better; maps and apparatus for demonstration are better and more common. This internal development of all aspects of school operation is in keeping with the increasing regard for an education which appears in the business world, in public life, and in the ambitions of individual pupils.

That this enlargement of the educational program should affect especially the upper grades of the elementary school and the first year of the high school is by no means surprising. It is just at this point in the school that the pupil, made acquainted with the fundamental tools of experience in the lower grades, finds himself entering productively into the enjoyment of his achievements. Because he has learned to read fluently the child in the seventh grade has before him the rich world of history and geography and elementary science. He can grasp with more assurance the principles of mathematics and can use with greater nicety the words and forms of the vernacular. The period of varied and enlarged education has come and the course of study must be enriched.

No less is it true that the first year of the high school must undergo an enlargement. Formerly it was the narrow portal to an exclusive course open to the few. Today the ninth grade is part of a broad cosmopolitan scheme of education. There is no disposition as in days gone by to limit the student's opportunity to a few required subjects.

Enrichments of the course of study are by no means confined to the grades here under discussion, but the lower grades of the elementary school from the nature of the case must always concern themselves chiefly with a comparatively narrow range of rudimentary subjects. The upper grades become broader because they permit the pupil to pass out of the rudimentary stages of his education. Nor should the fact be overlooked in this connection that the enrichment of a course of study often consists in that internal reorganization which frees instruction from unproductive by-paths. History can be enriched by taking out worthless formal material. Arithmetic and geography must be purged of the waste which is now all too common. This internal readjustment is quite as important as importation into the course of new material.

Especially is it true that the work of each grade should be modified so as to eliminate useless repetitions. Reviews are important and should not be neglected, but the upper grades of the elementary school have sometimes been the scenes of unjustifiable waste of the time and energy of the pupils because the conscientious teacher has dragged the bored and sated children through review after review. Just because the eighth grade has been looked on as a kind of terminus, these reviews have doubtless tended to accumulate here. If we learn to think of the educational program as continuous, the reviews may be more equitably and economically distributed.

Of large importance in this connection is the character of the work in the so-called intermediate grades, especially the fourth, fifth, and sixth. Upon the efficiency of the work done here will depend in large measure the success of any attempt to reorganize the upper grades. Hand in hand with the development of a new point of view for the seventh and eighth grades should go a concerted and intelligent effort (1) to insure better teaching and a more mature and permanent body of teachers for the middle grades, and (2) to formulate principles that shall serve to govern the instruction and training of children between eight and twelve, at least as satisfactorily as analogous principles are now governing the work of the primary grades and the work that has to do with the adolescent period.

The enriched program must have one characteristic above all others. It must be appropriate to a democracy. Here we come to a point in the discussion where it is easy to fall into disagreements. The world is still experimenting with democracy. We are striving to develop a democracy in our other social institutions, as, for example, in our industries. How difficult it is to reach a generally acceptable definition of democracy appears if we study industries and industrial legislation and note the many shades of divergent opinion and conflicting practices.

Out of the uncertainties which surround this part of our discussion we may expect fairly universal assent to three general statements. First, the future must see greater emphasis than has the past on studies of community life and community needs. And the term "community" must not be narrowly defined. The course of study must be enriched to include intensive study of our nation and its meaning to our citizenship and to the world. Secondly, the future must see the enriched course providing a

broad, sure foundation for the practical life of the individual. Again, there must be no narrow limitation of the individual, no training for a single type of life. This is not a plea for narrow trade training, it is rather an assertion that there must be a vigorous effort toward the development of a comprehensive view of industry, so that the individual may choose his career after a broad view of democratic opportunity. Thirdly, the enrichment of the course must aim consciously at the destruction of those provincialisms and class prejudices which have worked in the history of nations in the past, counter to the interests of democracy. Ignorance of other tasks than one's own breeds lack of sympathy and results in the separation of group from group. Intelligence regarding others brings with it sympathy and co-operation.

Each of the three points outlined in the last paragraph invites one to compose a chapter on educational possibilities. This is not the appropriate place for a full discussion of these matters. In order to avoid ambiguity two negative statements must be made.

First, a course of study is not broad or enriched in the sense in which the term "enrichment" is used in this article if it is a limited course preparing for a trade. Nor is the fact lost to view that there is a legitimate demand in the experiences of many boys and girls for a trade training. It is, however, contended, with unlimited emphasis on the needs of a democracy, that whenever trade training is given it should be accompanied just as far as possible by broadening, sympathy-cultivating instruction. To give early a limited occupational training will tend (1) to set up class distinctions, and (2) to deprive large numbers of children of the broad basis of general and liberal training, which is essential to successful democracy. Every effort to reorganize the work of the upper grades should start from the fundamental principle that effective democracy implies the highest possible level of trained and informed intelligence in all of the members of the democratic group.

Secondly, there are certain forms of enlargement of the course of study which defeat rather than promote the ends of education. Thus if more subjects are introduced into the course than can be assimilated by the pupils there will follow a distraction which will be quite as disastrous as any limitation that could be put on the course. Pupils will fail to learn the lesson of concentration of attention; thoroughness and mastery will have no meaning for

them; they will carry away a confused general idea of the materials they study, and they will fall into a type of superficial thinking which is one of the perils of the modern course of study.

Not only so, but there is danger in the enlargement of the course of study that subjects will be introduced which are in form far beyond the maturity of the pupils. The old-fashioned course of study undoubtedly made the mistake of assuming too little capacity on the part of pupils. The new and more ambitious programs are sometimes reckless in the introduction of advanced courses. If, for example, algebra and geometry are to be brought down into the elementary grades they must be modified in their content and in their mode of presentation as compared with the same subjects when taught in the high school. There is no surer way to fail in the seventh and eighth grades than to carry back without change a high-school course in algebra and attempt to administer it in a formal way to immature pupils. These examples should serve as warnings against an irrational and ill-considered enlargement of the course of study.

We may turn now to another general principle of education which has been subject to a variety of interpretations in the course of the reorganization of the seventh, eighth, and ninth grades. It is the principle of individual differences. If there is one lesson which has been clearly taught by all of the recent investigations in education, it is the lesson that there are wide differences among pupils with respect to tastes, abilities, and capacities for progress, and that these must be heeded in the preparation of the school program. We are confronted here by a difficult problem. It is the business of a democratic school to see to it that the materials of thought which are presented to children shall contain enough common elements so that the thinking of the community as a whole shall be guided along similar lines. A school which gives to one class of children one set of ideas and ideals and to another class an entirely different set of ideas and ideals will make for social distinctions that are dangerous in a democracy. On the other hand, a course of study which knows no variations and makes no adaptations of its content to individuals of different capacities and different interests is quite as dangerous in a democracy as the stratifying course. Individual differences appear in the economic life of a democracy and play an important rôle in providing the community with workers of different types. There is the mature man who is interested in

engineering problems. On the other hand there is the man of literary type wholly unadapted to the practical problems of engineering but capable of making a contribution to the welfare of the community by his attention to letters. In the same way in the trades there is the man who has mechanical interests. On the other hand there is the carpenter who is more interested in the use of hand tools and in the problems of construction.

Differentiation of occupations is an important outgrowth of our present economic system, and no definition of democracy can overlook the principle of division of occupations and diversity of interests. Our schools no less than our factories must recognize the fact that the child as he matures differs increasingly from his neighbor. How soon the school should recognize this fact and begin to offer diversified opportunities to the children has been an unsolved problem in our educational system. Heretofore we have adopted the practice of introducing high school students suddenly to large opportunities of election. Even this practice is of relatively recent origin, but during the last decade a very wide latitude has been recognized as desirable in high school curricula. The elementary school, on the other hand, has been very slow in adopting the principle of differentiation and has introduced it in most systems only in the upper grades. If the elementary course is so safeguarded that its content of instruction shall give to all children some common central body of ideas, differentiation must be introduced cautiously and with full regard to the requirement that universal instruction be given in fundamentals. It is not incompatible with this demand that individual differences be recognized to some extent from the very outset of school life, although the general principle of individual differences begins to assert itself as an important basis of educational organization in the middle grades of the school. There ought to be a differentiation of such a sort that those pupils who can go forward rapidly shall have their capacity for more work recognized and those who mature somewhat more slowly and are able to progress only at a slower rate shall be given the type of instruction which is adapted to their particular capacities. Such a difference in rate of movement will inevitably have an effect upon the amount of material which pupils of different grades of ability can absorb. The faster pupils will cover a wider range of experiences, and it is to be expected that the education which results from this widening of the range of experience will mature into differ-

ences of taste and preparation for later work that are of major importance. There is no more urgent problem at the present time in the organization of the elementary-school course than the discrimination between those essential types of instruction which should be given to all children and the additional types of instruction which can properly be offered to children of exceptional capacities.

There can be little doubt that the reading in the sixth grade ought to be affected by this consideration. Children ought to be allowed to read silently passages of their own selection as a part of the regular school work. They ought, indeed, to be encouraged to take up material which will carry them beyond the ordinary routine of classroom exercises. The teacher's supervision of the children's reading thus becomes even in the intermediate grades a matter of differentiating the content of instruction.

What is true in reading is also true in the other subjects. The range and kind of historical material which is included in the seventh and eighth grades will differ according to the capacities of the pupils. This does not mean that one child should pursue a course in ancient history and exclude all of the material that belongs in the course in United States history. It means, rather, that all of the children should have training in the fundamentals of the history of their own country, but some children ought to be given an opportunity, because of their natural tastes and capacities, to go beyond the elementary requirement which is imposed upon all students. What is true of history is true also of cooking and of manual training.

The difficulty which arises in the application of this principle of individual differences is to be faced by frankly recognizing the unsolved problem of our new course of study. In the course of the future there must be a common body of material for all children and a body of carefully supervised but differentiated opportunities for children of different tastes and capacities. Anyone who is disposed to divide the course of study of the seventh grade into entirely separate and distinct curricula for different children does violence to the fundamental demands of a democratic organization. On the other hand, anyone who would hold the course of study at any point to rigid and narrow lines does violence to the natural demands which express themselves in the differentiated interests of the pupils.

In speaking of interests it should be recognized that by no

means all of these, either in childhood or in maturity, are called forth by economic needs. There has been a tendency in recent educational discussions to assume that boys and girls always find school lessons formal and stupid unless they see clearly how these lessons may be made to bear upon the earning of money. This tendency toward economic determinism in educational theory is most unfortunate. A premature or excessive appeal to occupational and economic motives may easily result in a narrowing of the horizon and a closing of the mind to the broader things of life. Under the older social order the wider vision was essentially a class privilege; it is the task of the schools of a democracy to make this privilege universal. And this demands an abundance of opportunities and stimulations which the older curriculum is too narrow and too inelastic to provide.

The general principles which have been set forth in the foregoing paragraphs are capable in practical organization of many different kinds of application. The authors of this article find it possible to agree even on certain judgments with regard to the practical organizations which can now be observed in the seventh, eighth, and ninth grades. It is a well-known fact that there is at the present time no uniformity in the organization of the so-called junior high school. There is the junior high school which is nothing but a departmentalized union of the seventh and eighth grades. Its course of study is identical with the course of study which has been in operation for years past. There is, on the other hand, the junior high school which sharply differentiates and divides its students into entirely different social castes. Some of the latter types of schools have laid great stress on commercial or industrial training and have treated the junior high school as the device for introducing into public schools a narrow type of vocational training at an early stage in the life of the pupils. Neither of these extreme types seems to the authors of this article to conform to the principles set forth in earlier paragraphs.

Criticism of the unhappy forms of junior high school organization which have appeared in recent years should be paralleled by criticism of the unmodified seventh, eighth, and ninth grades. The elementary school has long suffered from the poverty of its course of study. There was a time when the sessions of this school extended through only a few months in the year. Then there was some justification for a course of study limited to the rudimentary branches. As the school year has expanded the tra-

ditions of purely rudimentary instruction have in some quarters survived. Teachers have been loath to branch out into new and productive lines. They have sometimes been so faithful to the limiting traditions of the earlier school that they have spun out with the most conscientious industry subjects that did not require the time lavishly bestowed on them.

The foregoing statement of an educational creed cannot be closed appropriately in this day of urgent social problems without a word with regard to the opportunity which is here for the making of American schools more truly democratic than they have ever been before. Our school system, with its present meaningless distinction between the elementary and secondary fields, grew out of European traditions. The elementary school especially carries many of the limitations that were imposed on the school designed by an aristocratic society for its common people. The high school has been and still is the school of privilege. Step by step we have been shaking off the restrictions which tradition has imposed on the common school. This article is a plea for a united effort to complete the task of democratizing American elementary education. There certainly can be no curtailment in such a program. There ought to be nothing but expansion and the elimination of breaks. Our school system should be in every sense a "unit" system. It should reflect at every point the two fundamental and complementary principles of democracy—opportunity and obligation, opportunity for individual development, coupled with and paralleled by the obligation of the individual willingly to learn the lessons that all must learn in common if our democracy is to rest on a real community of ideas and ideals.

EARLY EFFORTS TOWARD REORGANIZATION OF AMERICAN SCHOOLS*

BY FRANK F. BUNKER

The educational discussions and the educational practices of the last two decades show the existence of tendencies toward abandoning the present arbitrary divisions of the public-school system for a system wherein natural function shall determine the parts and their relations. The extending of the election of studies from university and college down through the high schools, and,

* *Reorganization of the Public School System*. United States Bureau of Education Bulletin 1916, No. 8. Adapted from pp. 40-59.

in some instances, into the upper grades of the elementary schools; the adoption of departmental teaching in the high school and in the older elementary grades; the endeavor to secure greater flexibility in grading and in promotion; and the introduction of industrial and vocational training into the schools are the directions in which effort has been expended to make more effective a system based largely upon tradition. While these tendencies express a recognition that the present system is imperfect, the reforms contemplated do not necessarily imply a reorganization of our grouping by years, but suggest, rather, an improvement within the confines of our traditional scheme. The discussions, however, ranging over such questions as shortening and enriching the elementary curriculum, the six-year "high-school college," the extension of the field of secondary education both upward and downward, the shortening of the time for colleges, the establishment of the "junior college," and the substitution of a triennial classification for our present quadrennial arrangement, go further and squarely demand that our school system be reorganized.

The first public utterance of weight that called into serious question the organization of the school system was that of President Eliot, at the Washington meeting of the Department of Superintendence of the National Education Association in 1888. In this address, entitled "Can School Programmes be Shortened and Enriched?" President Eliot asserted that for the past 60 years the average age of college admission has steadily risen, reaching 18 years and 10 months at Harvard, and that the period beyond college graduation required for professional training had lengthened to three or four years, with the result that "the average college graduate who fits himself well for any one of the learned professions, including teaching, can hardly begin to support himself before he is 27 years old." In this epoch-making address he maintained the desirability of condensing school courses to gain time and of increasing the efficiency of instruction in order to secure as high an admission standard as formerly. He also asserted that this was entirely possible by improving the teaching force of the schools through a better tenure of office and by raising the proportion of male teachers in the schools; by the improvement of school programs, making them substantial and interesting; by diminishing the number of reviews, and by never aiming at the kind of accuracy which reviews, followed by examinations, are intended to enforce; by developing means which

will insure a normal rate of promotion from grade to grade, and by securing a longer school day and term.

This question of the steadily increasing age at which students enter college was one that seriously concerned the Harvard president and his faculty for many years. As far back as 1872-73 this tendency had been publicly noted. In his report of that date, President Eliot, in discussing certain changes which had been made in the admission requirements of Harvard, pointed out that, while these had been essentially modified, they had not been made more difficult, and he added:

The average age of admission has gradually risen until it is now a little over 18 years, and the college faculty, thinking that age to be high enough, do not wish to require for admission anything more than a boy of 18 of fair capacity and industry may reasonably be expected to have learned.

In his report of 1885-86 President Eliot again referred to this matter, asserting that three years of the discussion of admission requirements by the college faculty had resulted in the adoption of a compromise measure, which was expected to assist in bringing down the average age of admission to 18 or thereabouts. He added:

At present about two-fifths of the freshmen are over 19 at entrance—a condition of things which the faculty views with concern.

This situation, which was observed with growing alarm by the Harvard faculty, led to remedial efforts of four kinds: (1) Modifying college entrance requirements; (2) urging the parents of prospective college students to send their sons to college as soon as the latter were qualified; (3) shortening the college course from four years to three years; and (4) persuading the elementary and secondary schoolmen generally to condense their courses.

These proposals, advanced by the Harvard faculty as hopeful methods of solving a specific problem which was becoming increasingly serious, started discussions among educators that quickly carried the participants into a critical examination of the entire range of the educational system, developing thereby, during the last two decades, a body of educational comment of great brilliancy and worth. Influenced partly by Harvard's example and partly by the fact that the problem was common to all, the faculties of practically all the American colleges and universities took up the discussion of the problems that concerned each, ar-

living in course of time at the conclusions and plans of procedure which the local needs and traditions respectively determined. An examination of the files containing the proceedings of such organizations as the Association of Colleges and Preparatory Schools of the Southern States, the Association of Colleges of the Middle States and Maryland, the North Central Association, and the New England Association of Colleges and Preparatory Schools, shows that much of the time of the annual conferences of these organizations held during the nineties was likewise given over to a discussion of similar questions. The first organization of national prominence, however, to take up this examination was the National Education Association. Through the National Council, the Department of Superintendence, and the Department of Secondary Education, it made scholarly contributions to the literature of the discussion.

At the suggestion of President James H. Baker, University of Colorado (then a high school principal), the National Council appointed in 1892 a committee of 10 persons, of which President Eliot was made chairman, to arrange a series of conferences between the school and college teachers of each of the principal secondary subjects in order to determine the limits of each, the best methods of instruction, the most desirable allotment of time to the several subjects, and the best method of testing the pupil's attainments therein. Nine conferences on as many different secondary-school subjects were held, each in charge of a committee of 10. While the conferences were ostensibly held to discuss the period of secondary education, it was inevitable that many suggestions should be made respecting the program of the elementary schools and of the college period. In consequence, the Report of the Committee of Ten covers in many significant respects the entire range of the school system.

While the grouping of eight years in the elementary division and four years in that of the high school, now generally followed in the United States, had been sharply attacked prior to the publication of the committee's report, yet in all of the discussions comprising the report, the traditional grouping is assumed, although several of the subcommittees demanded an earlier introduction of secondary-school studies, and all desired to see given in the elementary schools broad surveys of their respective subjects. The Latin conference compared the age at which Latin is begun in Europe and in this country, and expressed the hope

that such a modification of grammar-school courses can be made without delay as to render it possible that the high-school course—and with it the subject of Latin—may be begun not later than the age of 14.

The Greek conference voted to concur with the Latin conference in its recommendations as to the age at which the study of Latin should be begun, and asserted that the average age at which pupils now enter college should be lowered rather than raised. The conference on modern languages recommended that elective courses in German and French be provided in the grammar schools, beginning with the fifth grade. The conference on mathematics recommended that a course of instruction in concrete geometry be introduced into the grammar schools, and that some familiarity with algebraic expressions and symbols should be acquired in connection with the course in arithmetic. The conferences on physics, chemistry, and astronomy, and on natural history would have the elements of those subjects begun in the first years of the elementary division and continued throughout. The conference on history, civil government, and political economy "especially recommends such a choice of subjects as will give pupils in the grammar schools an opportunity to study the history of other countries." In the spirit of the foregoing recommendations relating to an earlier beginning of secondary subjects the Committee of Ten concurred, in the following language:

In preparing these programs the committee was perfectly aware that it is impossible to make a satisfactory secondary-school program limited to a period of four years and founded on the present elementary-school subjects and methods. In the opinion of the committee several subjects now reserved for the high schools, such as algebra, geometry, natural science, and foreign languages, should be begun earlier than now, and therefore within the schools classified as elementary; or as an alternative, the secondary-school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary-school period. Under the present organization elementary subjects and elementary methods, are, in the judgment of the committee, kept in use too long.

Not only did the committee take advanced ground in respect to the relation of the secondary schools to the elementary schools, but it set forth, with even greater emphasis and distinctness, its conception of the relation which should obtain between the sec-

ondary schools and the colleges, and in so doing it condemned, by implication at least, much of our present practice. The committee declares:

The secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for colleges. Only an insignificant percentage of the graduates of these schools go to colleges or scientific schools. Their main function is to prepare for the duties of life that small proportion of all the children in the country—a proportion small in number, but very important to the welfare of the Nation—who show themselves able to profit by an education prolonged to the eighteenth year and whose parents are able to support them while they remain so long at school.

And, again, the committee says:

A secondary-school program intended for national use must therefore be made for those children whose education is not to be pursued beyond the secondary school. The preparation of a few pupils for college or scientific school should, in the ordinary secondary school, be the incidental and not the principal object.

In short, the committee believes that the college should take the high-school student who has had four years of strong work where it finds him and without regard to the particular subjects which have comprised his curriculum, and that this "close articulation between the secondary schools and the higher institutions would be advantageous alike for the schools, the colleges, and the country."

This unusually able and suggestive report was taken up immediately by the newspaper and magazine press, by the pulpit and platform, and by the foremost writers on education. In consequence the report commanded from the first an interest so widespread as to become national in its extent. It is interesting to observe, too, that this study of the secondary division of the American public-school system, made by the Committee of Ten, came at a time when the same division in each of the French, German, and English school systems was undergoing sharp scrutiny.

In 1890 both France and Germany appointed national commissions to study the work of the secondary school, and simultaneously with the final sitting of the Committee of Ten there convened at Oxford the first national meeting of schoolmasters and university professors ever held in England. It is significant that

the questions foremost in debate at Paris, Berlin, Oxford, and New York were the same, and that independently of one another the conclusions reached were in remarkable accord in important particulars.

A few months before this report of the Committee of Ten was published (1893), the Department of Superintendence of the National Education Association appointed a committee of 15 on elementary education that frankly raised for discussion the traditional division of eight years elementary and four years high school and departmental teaching in the upper grammar grades. The members of this committee were divided into three subcommittees—one on the training of teachers, one on the correlation of studies in elementary education, and one on the organization of city school systems. Each subcommittee prepared and sent a questionnaire to representative school men and women through the country, and from the returns a report was prepared that was finally presented before the Department of Superintendence in 1895 at the Cleveland meeting.

The only subcommittee which developed a discussion bearing on the function of the elementary division and on its relation to the secondary schools was the subcommittee on the correlation of studies, under the chairmanship of William T. Harris. Seventeen questions were submitted by it, of which four bore more or less directly on function:

- (1) Should the elementary course be eight years and the secondary course four years, as at present? Or should the elementary course be six years and the secondary course six years?
- (2) Should Latin or a modern language be taught in the elementary school course? If so, why (part of question No. 3)?
- (3) Should any subject, or group of subjects, be treated differently for pupils who leave school at 12, 13, or 14 years of age, and for those who are going to a high school?
- (4) What considerations should determine the point at which the specialization of the work of teachers should begin?

The responses to these questions, with a few exceptions, showed hesitation at departing in any marked way from current theory or practice. The objection to shortening the elementary course to six years, held commonly by those replying to the first question, was the fear that such a step would cause many children to leave school. Indeed, several would have had the course lengthened to nine years instead. In respect to beginning Latin or

a modern language in the grades, the responses were about equally divided between those who considered language study profitable and those who hold that the mind is not "mature enough to profit by classical training, as now pursued, until high-school age." The question whether or not a subject should be treated differently for pupils having different objectives was answered almost unanimously in the negative. The tenor of the replies was that "the high school must be made to fit the boy; the boy should not be made to fit the high school." In the replies to the question relating to departmental teaching, no enthusiastic proponents were developed, but on the contrary some expressed strong opposition.

The subcommittee reflected, in its report, the same hesitancy and conservatism. In referring to the questions relating to shortening the elementary course to six years and the earlier introduction of secondary studies, the committee reported as follows:

Your committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic and that in the eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto the change from the work of the elementary school has been too abrupt, the pupil beginning three formal studies at once, namely, algebra, physical geography, and Latin.

In recommending this earlier introduction of algebra and Latin the committee was brought face to face with the question of the difference between elementary and secondary subjects. The committee pointed out that whereas those subjects which current practice has assigned to the secondary division of study have been so assigned partly because of tradition, partly because of admission requirements of higher institutions, and partly because of the intrinsic difficulties of the several subjects, yet there is a psychological factor which should determine the division in which a given subject is classed, namely, that whatever deals with the general form is relatively secondary, and whatever has to do with the higher correlations of the facts and relations of natural and spiritual phenomena belongs to the division of higher education.

As to the question whether or not pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work, the committee was not able to agree. Some contended that those who leave early should have a more practical course, and that they should dispense with studies of a preparatory character, while others held that it was best to have one course in the elementary schools for all. This position was urged on the grounds that any school education is at best but an initiation into the art of learning, and that, wherever the pupil leaves off in his school course, he should continue his studies in the public library and at home; and, furthermore, that a brief course in higher studies, such as Latin and algebra, instead of being useless, is of more value than any elementary studies that might replace them.

In its discussion of the question respecting the introduction of departmental work in the elementary school the committee, while not enthusiastic in its favor, went further than did the majority replying to the committee's questionnaire, and recommended that specialization of the teacher's work should not be attempted before the seventh or eighth year, and then in not more than one or two studies.

The third important study under the auspices of the National Education Association during the nineties was made by the Committee on College Entrance Requirements, and bore directly on the articulation of the secondary division with that of higher education. This committee was appointed by the Department of Secondary Education in 1895, and submitted its final report at the Los Angeles meeting in 1899. The report submitted by the committee is positive in general tone; it expresses convictions rather than doubts. In respect to the length of the elementary and secondary periods, the committee makes the following recommendation:

In our opinion it is important that the last two grades that now precede the high-school course should be incorporated in it, and, wherever practicable, the instruction in those two grades should be given under the supervision of the high-school teacher.

Again, concerning the high-school course, the committee recommended a six-year course, beginning with the seventh year, on the grounds that the seventh grade, rather than the ninth, is the natural turning point in the pupil's life; that an easier transition can thereby be made from the one-teacher regimen to the system

of special teachers; that a larger percentage of students would, through this arrangement, be retained in school; and that the final result would be a more closely articulated system, with a larger percentage of graduates from the high school.

On this plan the advisory committee on modern languages reported as follows:

There appears to be strong argument in favor of this plan. It is urged by thoughtful schoolmen that our American high school has become congested; that the increased requirements of the colleges and the pressing demands of new subjects for "recognition" have given to the secondary school more work than it can do thoroughly in the traditional allotment of time. When, as sometimes happens, the colleges are blamed for this state of affairs, and it is suggested that they reduce their requirements for admission, they are able to reply with much force that present requirements, even where they are highest, are none too high, unless we are willing to fall far below the standard of the Old World. The average graduate of an American high school is of about the same age as the average graduate of a German gymnasium, but the latter is further along in his studies and better prepared for higher work. We have therefore to consider the problem of strengthening the preparatory course, while recognizing that the ordinary four-year curriculum can bear no further burdens, and should, if anything, be simplified. Of this problem the obvious solution is to begin the proper work of the high school at an earlier date. Instead of dividing our educational years into eight primary, four secondary, and seven or eight higher, we should divide them into six primary, six secondary, and six higher.

Early in the second decade of the movement toward a functional reorganization the University of Chicago and the academies and high schools affiliating and cooperating with this institution took it up, and through the initiative and personal force of President Harper the discussion was carried on with great vigor. At the general session of the fifteenth conference, held during November, 1901, Prof. John Dewey read a paper on "Current Problems in Secondary Education," in which he declared that among the problems of first importance were those relating to the articulation of the secondary school in the educational system. In this address he pointed out that the elementary school and the college represent distinctly different

forces and traditions, historically; that the one was created by a broad democratic movement, while the other is a response to the desire to pass on to a privileged class the wisdom and enlightenment of the past; and that the high school is the product of the meeting of these two forces, and upon it, more than upon any other part of the school system, rests the responsibility of making an adjustment.

The year following (1902) the conference discussed reorganizing the system of education on the basis of an elementary school of six grades, followed by a secondary school of six grades. The discussion was summed up by President Harper in the following form:

A Proposition

1. To connect the work of the eighth grade of the elementary school with that of the secondary school.
2. To extend the work of the secondary school to include the first two years of college work.
3. To reduce the work of the seven years thus grouped together to six years.
4. To make it possible for the best class of students to do the work in five years.

Such a plan would fit in with—

1. The necessity, so widely recognized, of lifting the standard for admission to the professional schools.
2. The general feeling that in some way or other time must be saved in the preliminary stages of educational work in order that men and women may enter upon their life work at an earlier age.
3. The practice, recognized in other countries, of drawing a sharp line between the work of the gymnasium or lycée and that of the university.
4. The practice, now in common vogue, of making the first two years of college work only an extension of the work in the secondary school.
5. The contention, which seems to be well founded, that much of the secondary work of to-day was college work 30 years ago.
6. The tendency already manifesting itself in some quarters

in accordance with which high schools are offering postgraduate work and universities are accepting this work in lieu of the work of the first two years.

7. The principle that the line of separation at the close of the second college year is much more clearly marked, pedagogically, than the line at the close of the present high-school period.

8. The tendency, everywhere apparent, to extend the scope of the educational work offered by the State or municipality.

9. The tendency, already beginning to be noticed among smaller colleges, to limit the work offered to that of the preparatory school and the first two years of college.

10. The opinion, not infrequently expressed, that the work of the eighth grade is in some measure superfluous for certain classes of pupils and in some measure injurious to certain other classes.

11. The belief, more and more generally accepted, that the work of the school must be adapted to the needs and possibilities of the individual pupil, rather than that pupils should be treated in mass.

12. The principle that a pupil giving evidence of ability to do the highest grade of work may profitably be excused from doing the same amount of work required of the pupil of lower grade.

In opposition to such a plan there may be suggested:

1. The inclination to regard any system actually in use as better than a system or policy still to be tested.

2. The feeling that the reduction of time can be gained only by a loss of thoroughness.

3. The general lack of interest in any proposition to substitute a well-ordered educational system for the present lack of system.

4. The difficulties involved in adjusting the lower work to the higher, on the ground that the great mass of pupils receive only the lower, and that the public school system is intended primarily for them.

5. The belief that the State has already gone too far in providing public education of a high character.

6. The opinion that the present college policy, although it is the result of a gradual development, has now reached a position which it must always occupy.

7. The fear that the college idea would be injured by the rivalry of the new high-school colleges.

8. The desire to see specialism begin at a very early age.
9. The hesitation with which many would regard the transfer of the eighth grade from the realm of elementary to that of secondary work.
10. The failure, even in these times, to accept the doctrine of individualism in the field of pedagogical work.

This report closed with the recommendation that the conference establish three committees of seven each to consider the general problem; the first committee, from the point of view of the elementary work; the second, from the point of view of the secondary school; and the third, from the point of view of the college; these three committees to form a joint committee of 21. The conclusions reached by these committees were received by the general conference during its seventeenth annual session, November, 1903. This commission was instructed to report a year later at the eighteenth annual conference, to be held in November, 1904. At the appointed time the report, which follows, was submitted:

Your commission finds, as a result of their study of the subject connected with these propositions, that among other questions the following require to be investigated, namely:

1. Is the present policy of differentiation between the elementary and secondary schools desirable; or, should an effort be made toward greater unification in method and organization?
2. Should the elementary school correspond to the period of childhood, and therefore should it provide for six years of school work from the ages of 6 to 12 years, instead of eight years as at present?
3. Should the secondary school correspond to the period of youth, and should it therefore provide for six years of school work from the ages of 13 to 18, instead of four years as at present?
4. What revision of the curricula of the elementary and secondary schools and what changes in methods of teaching can be made that will contribute to economy of time and efficiency of work?
5. In order to secure a well-balanced development and at the same time to contribute to the economy of time, can the school year be lengthened advantageously and minor vacations be more equally distributed?

6. Under what limitations should high schools undertake to do the work of the first two college years?

The student who desires a full account of the early efforts toward reorganization of American schools is referred to Dr. Bunker's work. A sufficient amount of this work has been quoted to show outstanding features of the reorganization movement. The questions raised by the *Commission of Twenty-One* have been investigated ever since they were asked in 1904. Although the educators of this country have, for practical purposes, answered certain of these questions, most educators would now agree that this group of six problems still offers opportunity for further investigation and experimentation.

The need for a definition of the administrative units of education. Many attempts have been made to define elementary, secondary, and collegiate education. The elementary school has been variously defined as offering the undifferentiated training required by every one, as including only the minima of indispensable knowledge, as giving the basis for common thought, and as equipping pupils with the tools of learning. The secondary school also has been defined variously as the beginning of differentiated training, as a continuation of training in common thought alongside differentiation of certain courses, and as a socialized finishing school for the masses and therefore a people's specialization school. In accordance with suggestions aroused by the foregoing bases for defining educational units, collegiate education may be defined as chiefly differentiated training and social opportunity for persons who have already completed the undifferentiated portions of elementary and secondary schools; when so defined, collegiate education is understood as being in part vocational training and in part general training. It is hardly to be expected that a student of secondary education will find any one of the foregoing definitions satisfactory. The reason for their not being satisfactory is that no single definition can at present

account for three units with so diverse aims and practices as are found with each of the units. As Pittenger says:

Every student of educational affairs is forced at some time to ponder over the words "elementary" and "secondary" as applied to educational fields and institutions. At first approach the meaning of the terms seems clear. The elementary school is the first school entered by each recruit of the educational army, and the secondary school is the next, to be entered when the work of the first has been completed. Elementary and secondary education, accordingly, should consist of the materials taught and the methods employed in each of these respective institutions.

But a slightly broader acquaintance with the problems and literature of his profession convinces the amateur that the matter is not so simple as it seemed. He soon becomes aware of a real problem. In fact, he discovers that it is not only the novice who is troubled; even the "Doctors" disagree. He reads President Hadley's confession that one term which has puzzled him greatly is "secondary education"; or Monroe's statements that "the views concerning secondary education, as to its purposes, scope, curriculum, methods, or organization, are of the most diverse character, even among those who are specialists in this very field." And when he passes from these warnings to a perusal of the papers which have been written on the issue he is fairly bewildered by the diversity of meaning which he finds.⁷

Out of the attempts to define secondary education one finds, however, reasons for taking an invoice of our institutions. Present-day tendencies point to the desirability of defining the elementary school as the school which offers undifferentiated training to children for the first six grades and the secondary school as the school which continues certain forms of undifferentiated training and begins training which is differentiated. So long as the first two years of collegiate education contain a mixture of two-fifths secondary courses and three-fifths strictly collegiate courses,⁸ the upper reaches of secondary education will probably

⁷ Pittenger, B. F. Uses of the Term "Secondary" in American Education. *School Review*, XXIV, 130-141. February, 1916.

⁸ Koos, Leonard V. *The Junior College*. Research Publications of the University of Minnesota, Education Series. No. 5. 1924. P. 395.

go undefined. The readings which follow are intended to show directions in which reorganization has already taken place and the new directions in which still further reorganization can be expected. The first two readings—those by Shaefer and Ferguson—deal with the reorganization of the lower years of the high school, while the readings by Angell, Koos, and John treat the reorganization of the later years of secondary education.

THE SIX-YEAR UNIFIED HIGH SCHOOL VERSUS THE SENIOR AND JUNIOR HIGH SCHOOLS^o

BY HARRY M. SHAEFER

The term intermediate school, or junior high school, has been interpreted in different ways in various localities. For the purpose of this discussion, intermediate or junior high school will mean a grouping of Grades VII, VIII, and IX to meet the need of the adolescent through departmental organization, differentiated courses of study, and other means adopted for passing the child who has finished the sixth grade on through three years of life and work to the tenth grade. The alleged advantages and disadvantages of the following three types of organization employed in Los Angeles will be presented.

Type I. Schools organized on the six-six plan with either the entire upper six grades segregated in one building, or combined in a building with the lower six.

Type II. Departmentalized seventh and eighth grades in schools containing all grades of the elementary school and passing pupils to the ninth grade in either a junior high school or the first year of a four-year high school.

Type III. Junior high schools which graduate pupils to the first year of the senior high schools or to the tenth year of the school course.

Alleged disadvantages of Type I. There is too great a disparity of interests and maturity of pupils. An undue amount of attention and teaching time is given to Grades VII to IX; costs are increased because teachers are of the same salary rating as in the main city schools.

^o *Addresses and Proceedings of the National Education Association*, LVIII, 1920. Pp. 221-226. Adapted.

Alleged advantages of Type I. Better housing facilities, larger number of teachers, and better equipment especially in such departments as machine shop, home economics, commercial, and wood-work. Also, as a result of increased enrolment, pupils in such schools can engage in many desirable extra-curricular activities which are closed to smaller schools. These advantages lead in turn to a reduction of elimination of pupils. The general feeling is that this form of organization, notwithstanding its faults, is the best solution so far obtained to meet the situation in a rural community or in the small town surrounded by tributary school territory. It brings better results than does the plan of running small separated schools as individual units. Consolidation, while it leaves much to be desired and introduces new problems, is such an improvement that it should be continued in place of the old plan.

Alleged disadvantages of Type II. The failure of this type to recognize the needs of the maturing adolescent pupil leads to a maladjustment of both the young elementary-school child and the adolescent. The advantages claimed for this type are in reality disadvantages which block the desirable development of the child.

Alleged advantages of Type II. The presence of Grades VII and VIII gives the elementary school more spirit, vigor, and enthusiasm and leads to better results. This claim which is made by most principals emphasizes results that are beneficial to Grades I to VI, while it minimizes or overlooks the handicap suffered by adolescent pupils who are detained under an elementary-school régime at a time when nature is demanding a new and changed régime. The strongest claim for this type is made for the child of foreign-born parents who is closely attached to the school of his childhood, who shrinks from breaking his association with that school, and who fears the strangeness and association of a new school and a changed environment.

Alleged disadvantages of Type III. The foundation years of the high-school subjects are taken from the high school. Work in these years and subjects is done in an entirely different school. Where the foundation years, as well as the senior high school years, are under the direction of the same headship of departments and the same instructors, coherence in the work results. There is a better arranged plan on which all of the years are conducted.

The departmental type of program, involving many teachers and many subjects, tends to nervous instability and mental scat-

tering. The break at the end of the ninth year in passing from one school to another and from one organization to another is in this way made more striking.

The excess number of subjects together with liberal election, puts the pupil ahead of his real ability. Fourteen-year-old pupils are combined with sixteen-year-old ones; literature and other subjects too advanced for the younger pupil are undertaken and the younger individual is forced toward an outlook which is beyond his mentality. He usually passes the subject but fails to derive full value from it. This tends to increase the desire on the part of the pupil to pass subjects rather than to obtain the maximum of training from the pursuit of a given subject, when the onward urge throws him away from a thorough mastery of the fundamental elementary subjects. Later, when the teacher attempts to teach him algebra, she finds it necessary to run back to more fundamental arithmetic; or when she endeavors to conduct Latin or a modern language, she must spend more time teaching English.

The much needed discipline for the young person of the adolescent age is not obtained in the junior high school; much better results would be obtained under a plan which did not make the break at the end of the ninth year.

Because of a considerable list of electives, the pupil tends to overload in the junior high school, and thus undertake excess work at the expense of good work. He comes to the senior high school attempting to offer additional credits made in junior high school in order that he may shorten his senior high school course.

Alleged advantages of Type III. The junior high school where separate from the senior high school, can provide subject matter, organization, and methods of teaching which are especially appropriate for young adolescents. The interests, attitudes, and activities of children aged 11 to 14 differ from those of young men and women fifteen to nineteen years of age. All of the physiological and psychological differences which have been stated by the specialists and which it is not our province to restate here, urge such an arrangement. The association of the pupil of the junior high school with the senior high school pupil leads to the repression of the younger and standards being set by the older, said standards being of a type quite unsuited to the need of the younger pupil at his state of development. Pupils of the junior high school are really boys and girls, while those of the senior high school are young men and young women. In their attitude

toward life, toward school work, toward all sorts of school activities, there is a divergence of interests. The younger enjoy play, while the older are fitted for formal sports. Every speaker who has addressed junior high school audiences has been cognizant of the youth of the audience, the tendency to "wobble." He has found that the type of address to which the senior high school student will listen intently, will promote restlessness or playfulness when given before a junior high school audience.

The junior high school can give to each child from the elementary school a new knowledge of his own special abilities and a vision of the possibilities and values of higher education. It is a place for both discovery and revelation. Here, too, the adolescent forms some idea of that other-mindedness, that altruism, that social service so greatly needed in the present-day world.

The speed of the bright pupil is accelerated. The slow pupil is placed in associations more suited to his abilities. Pupils as a whole gain time.

Prevocational training and vocational work are undertaken. This reflects the industries of the locality and links up with the life of the community.

Promotion by subjects becomes a practice easily employed.

Numbers passing to senior high school are largely increased.

By retention of ninth grade pupils in junior high school, the congestion in senior high school is relieved. Attendance in senior high school is more limited to students of like interests, ages, and requirements.

The ninth grade, which has been a source of much anxiety and of grave concern, works under conditions better suited to the stage of advancement, mentally, morally, physically, and is a more satisfactory group in the junior high school than in the senior high school.

Those who are acquainted with the plan and the results obtained, pupils, teachers, administrators, patrons, are practically unanimous in their endorsement.

ARTICULATING THE JUNIOR AND SENIOR HIGH SCHOOLS²⁰

BY ARTHUR W. FERGUSON

During the winter of 1922-23, the writer made an intensive study of the manner in which the Holmes Junior High School of

²⁰ *The School Review*, XXXI, 540-546. September, 1923.

Philadelphia was articulating with the two senior high schools to which it sends its graduates. The results of the investigation suggested certain problems of articulation that could very well arise in any school system instituting the junior high school. Of these problems, the following were singled out and made subjects for a nation-wide study: the length of time necessary to achieve satisfactory articulation between the senior high school and the junior high school, the subjects in the senior high school presenting the greatest difficulty for the junior high school graduate, the reasons for these difficulties, and the general attitude of the two institutions toward each other.

The immediate practical problem that the junior high school graduate faces in the senior high school is the problem of making good in the new environment as he finds it. That the senior high school is not the sort of institution that the junior high school would have it be does not help the pupil in his difficulties. Whether the senior high school is progressive or traditional, whether it is sympathetic with or antagonistic to the junior high school, the fact remains that the junior high school graduate must face, in the senior high school, conditions as they are and not as they ought to be. Hence the emphasis in the nation-wide inquiry was on the difficulties that the junior high school pupil must meet, in many cases, in the upper secondary school.

To get at the facts, both from the angle of the senior high school and from the angle of the junior high school, two questionnaires were prepared. One hundred and twenty-five of these questionnaires were sent, for the most part to cities in which the junior high school had been established for a relatively long period. The senior high school questionnaire was sent to the same cities in order to get reactions from the two institutions in the same city. Replies were received from 37 junior high school principals distributed through 17 states and from 36 senior high school principals distributed through 11 states. A total of 73 replies were received from principals scattered through 18 states. Analysis will be made first of the junior high school questionnaire.

Junior High School Questionnaire. 1. Were the pupils who were promoted to the senior high school at the end of the first year that your school was in existence as a junior high school able to do the work of the senior high school without serious handicap? Yes, 30; no, 5; unable to say, 2.

2. How many years elapsed after the establishment of your

school before there was general agreement that its graduates were successful in the work of the senior high school? One year (unqualified), 15; one year (qualified), 11; two years, 1; three years, 6; indefinite, 4. The following are some of the qualifications made by those answering "one year":

"You will never have general agreement until deep-seated prejudices against the junior high school are overcome. This will not come until we have a new generation of senior high school teachers."

"At present, ninth-grade pupils receive a diploma admitting them to the tenth grade."

"When our school was first organized, the curriculum was identical with that of the seventh and eighth grades in the elementary schools with the addition of Latin and German. The only difference between these grades in our school and the same grades in the elementary schools at that time was that we were organized on a departmental basis. Our ninth grade was almost identical with the senior high school ninth grade. Since the adoption of our new intermediate curriculum we have had more difficulty in the articulation. However, these difficulties are gradually being adjusted in the planning of the new senior high school curriculum."

"None, for there was no abrupt establishment, rather a gradual evolution."

"From the first our pupils were able to do more advanced work in mathematics and languages than pupils who had not had junior high school training."

3. With what subjects have the graduates of your school had the most difficulty in the senior high school? Foreign language, 18; mathematics, 16; English, 6; commercial subjects, 3; mechanical drawing, 1.

4. To what do you attribute these difficulties? The following comments were made with reference to foreign language:

"Direct method in junior high school, grammatical method in senior high school."

"Refusal of senior high school to credit work done in junior high school."

"Our difficulty in the field of foreign language has arisen

from the fact that pupils with low intelligence quotients cannot learn a language by means of an academic study of its fundamental structure. Their way of learning a language is by full and motivated experience with the language. This method most high-school teachers are unwilling or unable to employ."

The following comments were made with reference to mathematics:

"General difficulty with mathematics throughout the grades."

"Textbook."

"High-school mathematics is different and difficult. It has not been sufficiently adjusted to the needs of the child."

The following comments were made with reference to English:

"Lack of theme preparation. Inability to state thought clearly, however simple."

"Frequent changes in teaching staff."

"Failure to get technical grammar."

"English not sufficiently stressed in seventh and eighth grades."

"Difference in ideals of two schools."

"During the first years of the junior high school we gave less attention to technical English than was formerly given in the grades. All criticism in the senior high schools came as a result of this; but our graduates talked and wrote better than before."

The following comment was made with reference to commercial subjects:

"In the case of typewriting, wrong standards of rating students. In shorthand, students lack English background and experience."

The following general comments were made:

"Nature of subjects, immaturity of some pupils, lack of capacity on the part of some."

"Lack of articulation between the senior and junior high schools."

"Same subjects (English and mathematics) were difficult in the junior high school."

"Lack of judgment as to what should be accomplished and no provision for grouping by ability."

"Different administrative point of view."

"Due purely to lack of careful preparation for such articulation."

"Lack of continuity in subject-matter."

"The attitude of the principal and faculty of the receiving school."

"Departmental work is apt to throw responsibility for a subject on one teacher. If the teacher of French is poor, then all pupils in French receive poor instruction."

"Salary schedules."

"Hardened teachers in the senior high school."

"Shorter periods and more subjects in the junior high school."

5. What readjustments in curriculum or methods of teaching have been necessary in your school to facilitate the success of its graduates in the senior high school?

"Uniform course of study for same grade in all schools."

"Stressing algebra in general mathematics."

"No readjustment in curriculum, but senior high school methods of teaching adopted."

"Have limited time devoted to special activities, have changed methods in French, and have returned to more rigid drill on technical English."

"We have had in mind the needs of the child rather than preparation for high school. We have tried to select subject-matter and modernize our methods."

"Compromise with senior high school to some extent by putting science and language on a different basis. No readjustment of method."

"At present a little more emphasis is being placed on grammar. The recasting of courses in the senior high schools, with one exception, has not taken place as it should."

"Longer periods. Supervised study."

"More time to algebra. More elective subjects."

"Metric system added to mathematics as basis for science work in senior high school."

"More formal grammar."

6. Do you feel that these changes have vitiated any of the fundamental purposes of the junior high school? Yes, 3; no, 19.

Senior High School Questionnaire. 1. Principals receiving pupils from both the elementary school and the junior high school—How do the pupils of the junior high school compare with the pupils who have spent the ninth grade in the senior high school, in preparation to do the work of the tenth grade? Principals receiving pupils from the junior high school only—How do the graduates of the junior high school compare with the pupils who formerly came from the elementary school, in preparation to do the work of the senior high school? Combined answers: Better prepared, 7; as well prepared, 11; less well prepared, 7; judgment suspended, 4; receive no junior high school pupils, 4; sending school not a real junior high school, 3.

2. (a) In what subjects has the junior high school graduate most conspicuously failed? Mathematics, 14; foreign language, 12; English, 5; commercial subjects, 2. (b) To what do you attribute these failures? Poor teaching, 5; poor texts, 3; poor equipment, 2; differences in objectives, 2; idea of play; immaturity of pupils; too much "try out" and not enough "carry on"; lack of reorganization of elementary-school subjects; difference in methods; attempting too much; high percentage of dull pupils.

3. (a) In what subjects has the junior high school graduate achieved marked success? English, 4; science, 2; Latin, 1; French, 1; hand work, 1; no subject, 11. (b) To what do you attribute this success?

"English.—Substitution of literary study for formal reading lessons. More emphasis on oral composition."

"Science.—More initiative."

General comments.—"Junior high school methods." "Socialization."

4. Is there any evidence that the junior high school graduate is better equipped to assume leadership in the social life of the school? Yes, 10; no, 13.

"Yes, because the junior high schools have patterned their school life after that existing in the senior high school."

"No, a little more ready to try."

"Decidedly yes."

"He has had more training, and I think he shows it in the senior high school."

"Yes. I think he is better trained in resourcefulness and initiative—not in stability."

5. What readjustments in curriculum or methods of teaching have been necessary in your school to assimilate more easily the junior high school graduate?

Review of work already done.

"Special coaching of junior high school graduates in English, foreign languages, and mathematics."

"We have reorganized our curricula and subject-matter and developed the project and socialized form of recitation."

"We have changed our French and Latin courses."

"We have had to reach down in algebra to help up the incoming students. We believe that too little drill on fundamentals is given in the junior high school."

"They (junior high school graduates) have been kept together in classes as far as possible."

6. Do you feel that these changes have lowered or raised the scholastic standards of your school? Lowered, 4; raised, 4.

Replies were received from both junior high school principals and senior high school principals in nineteen cities. A study was made of the agreement exhibited by the answers of these principals, with the following result: In general: agreement, 17; non-agreement, 2. In details: agreement, 15; non-agreement, 4.

The writer carefully studied the questionnaires returned by the senior high school principals for the purpose of determining their general attitude toward the junior high school. They grouped themselves as follows: sympathetic, 21; unsympathetic, 10.

The following general comments on the junior high school were made by senior high school principals.

"I would like to see the junior high school continue as a two-year school. I think it could do all it now does toward

the socialization of the child, and the senior high school could get him in time to participate effectively in educational guidance."

"The junior high school has possibilities. The freedom it accords to very young pupils is often their undoing. Home study is often discouraged. There is too much playing at work. They do not 'dig in' or lay adequate foundation. Much of the work has to be done over again in the tenth grade. More concentration—less dissipation—is needed. Too many young and inexperienced teachers."

One junior high school principal states the problem of articulation as follows:

"There is one thing which is bound to result from the operation of such a retention factor as has resulted from the junior high school and that is the promotion into the tenth grade of a mass of weak human material which heretofore has never survived to the senior high school and of whose pedagogical characteristics the typical senior high school teacher has no understanding whatever. High-school teachers do not understand that this weakness is not a matter of preparation, but rather one of congenital limitation.

"Those pupils who are of the type that have always done senior high school work should do better work than ever before. This is the responsibility of the junior high school. The other pupils who are new to the senior high school should succeed in their work. This is the responsibility of the senior high school. With reference to the latter group, the junior high school has done its part when it has succeeded in keeping them busy and interested to the point that they are desirous of going on into the tenth grade."

One fact clearly brought out by the questionnaires promises to delay the day of satisfactory articulation of junior and senior high schools in many places. On the one hand, there is an enthusiastic group of junior high school principals so convinced of the destiny of the new institution that they cannot see the possibility of pitfalls ahead. These men are prone to make extravagant claims for the junior high school on flimsy evidence. On the other hand, there is a conservative group of senior high school principals

who, even if they accept the junior high school, do so in the spirit of a "woman convinced against her will." One of the distinguishing characteristics of these men is that they cannot conceive of the junior high school as having any reorganizing influence on the senior high school. When these two types appear in the same school system, the junior high school begins operations under a serious handicap.

In conclusion, the writer suggests a program of articulation in outline form and without comment. Its features contemplate some problems that were not stressed by these questionnaires. They seem to the writer to be reasonable solutions for the five fundamental difficulties that are apt to arise in attempting to secure proper co-ordination between the junior and senior high schools.

1. To "sell" the junior high school idea to senior high school teachers and administrators.

2. To plan in advance the academic work of the junior high school, such planning to be participated in by senior high school teachers.

3. To set up an expanding program of student activities from the seventh grade to the twelfth grade.

4. To instal a continuous program of guidance through the six secondary grades.

5. To appoint teachers in the junior high school on the basis of secondary-school standards.

THE JUNIOR COLLEGE AND THE SENIOR HIGH SCHOOL ¹¹

BY JAMES R. ANGELL

The remarkable development of the American high school has in the last few years created a considerable number of altogether new educational problems. The college and the university are often directly and always indirectly affected by the policy adopted by our high schools, and in the present junior college movement they are likely to find their own organization and procedure radically affected. Responding to various motives occasional high schools have for a great many years past offered work somewhat in advance of the college-preparatory work with which the cur-

¹¹ *Proceedings of the North Central Association*, XX, 80-94. 1915 Abridged.

riculum of most of our high schools in this part of the world comes to a close. In certain instances this advanced work frankly undertook to follow the lines of the work of the Freshman year in the ordinary American college, and was organized explicitly with a view to supplying this special program. In other cases the content of the advanced work was more incidental, if not accidental, and materially more limited in amount. Within the past ten years we have had several instances of high schools undertaking to supply two years of work in advance of the usual four-year high-school course, and in this case often calling themselves junior colleges.

The development of the junior-college high school seems on the whole to be so natural a consequence of our general public educational system that one can hardly cherish anything but sympathetic interest in the undertaking and hold one's self ready so far as possible to assist in a wholesome line of growth. Certain obvious dangers we must all recognize the moment attention is called to them. Not a few high schools are at present unable to do thoroughly even four years of secondary work. They lack equipment both of laboratories and of libraries; they lack adequately trained teachers, and they lack financial resources materially to improve their conditions in the immediate future. For such schools to consider the addition of a fifth and sixth year of work is a form of folly which local pride is unfortunately likely to encourage, but which ought to be described by outside disinterested parties in the frankest and most unequivocal terms. The result of such enterprises is sure to be confusion worse confounded. The first obligation of every school is to do thoroughly well its elementary work.

Again, there are many schools in communities of moderate size doing with admirable thoroughness the work which they pretend to attempt, schools which are little by little adjusting themselves more completely to the needs of their own communities, schools upon which intelligent and unbiased opinion can only entertain one verdict—and that of a thoroughly flattering kind. For many such schools the attempt to take on a fifth and a sixth year of work, even if there be a modicum of demand for it, is likely to prove itself highly ill advised, for it is reasonably sure to mean overloading teachers already carrying their full burden of work, it is almost certain to involve attempting results for which the available facilities are wholly inadequate, and as a consequence

to substitute for a well-organized school doing faithfully and intelligently the thing within its reasonable reach, a shoddy, ill-adjusted, and unsuccessful institution exposing itself to legitimate criticism and ultimate loss of public confidence. Only on the basis of adequate state aid could schools belonging to either of these two groups properly enter on junior-college work.

Contrasted with either of these types of institutions is a considerable group, for the most part found in the larger centers of population, but in a few instances located in smaller but well-to-do communities, where the work of a junior college can be well afforded by the constituency, and where not a few obvious advantages are sure to follow from the establishment of such a school. We have become accustomed through the notable example of one or two institutions in our own country to the idea that a great city may well support a municipal college or university much after the fashion in which state universities are supported. Such institutions are undoubtedly likely to be rapidly multiplied, and the junior-college high school is presumably in big cities the advance agent of this particular kind of educational prosperity.

Certain desiderata in the organization of the junior college on high school foundations may reasonably be formulated as substantially essential to real success. The first of these without any great question is adequate financial support. We have certainly learned one bitter lesson in this country, which is that education, like other earthly blessings, costs money, and that one cannot secure it in its better qualities without being ready to pay the market price. Certainly to found a junior college without reasonable provisions for the added expenses which must be involved is unjustifiable from every point of view. The temptation to a contrary view is subtle and pervasive. In a school not badly crowded with students it may seem quite possible by a little rearrangement of the schedule or possibly by the introduction of one additional instructor to free sufficient time of the teacher of mathematics, the teacher of language, and the teacher of history to give courses to a small group of students ostensibly corresponding to the Freshman courses in college. No doubt something can be done in the smaller schools by rearrangements of this character, but if the more advanced courses are really to be given satisfactorily it will be found that the small schools must almost certainly add to their facilities of laboratories and libraries, and that the advanced courses if they are to be given in a reputable way will

require very considerable inroads on the time of the teacher and in some cases will, for their proper conduct, require distinctly more advanced training than some of the teachers will have received.

I am not prepared to urge that every junior college based on a high school foundation must have its faculty completely occupied by the work of the college. Indeed, I can see some obvious practical advantages in having the teachers who carry the work of the fourth year of the high school in direct personal touch with the work of the fifth and sixth years. I am quite convinced that a very large part of the friction which has been generated between the colleges and the high schools has been because the teachers in each institution, and particularly the college teachers, were so hopelessly unfamiliar with the actual conditions of work in the other type of institution. But whatever the decision regarding this issue, it is surely not open to question that the professional training to be demanded of teachers who do this junior-college work should be made distinctly more severe than in actual practice the demands have been which high school teachers have had to comply with. I note that the California schedule demands that the Master's degree at least shall have been received from a reputable institution by the teachers who undertake the junior-college work. This seems on the whole a conservative and modest requirement. The requirement of the University of Illinois is similar but not quite so definitely formulated.

Admission to such a junior college is a privilege restricted in some schools to the really high-grade students. In others graduation from the fourth high school year is all that is required. To discuss the merits of this restriction is impossible at this time. Obviously, however, it raises a question very fundamental for the ideals of these institutions.

There certainly should be, and in many of these institutions is, a limitation of the number of hours per week that a teacher may be called upon to give. Moreover, there should be assurance that the methods of instruction are essentially collegiate in character.

Evidently there are three main groups of interests to be safeguarded in the situation which we have been considering. The first is that of the colleges and universities; the second, that of the high schools; and the third, that of the general public which supports both. It may be thought that such a distinction of interests is artificial and unreal, but in point of fact it corresponds

with a good deal of exactness to the cleavage into parties which characterizes educational as well as political life. I have given them in inverse order of what I consider to be their intrinsic importance and directly in the order of their ability to protect their own interests. The colleges and universities are on the whole best able to safeguard these interests. The high schools are in general exposed to more sources of injury and such as are on the whole less easily controlled. The general public is in the long run best able to protect itself, but at the outset is least likely to find its immediate interests championed by intelligent and forceful leaders.

It goes without saying that in the last analysis a sane estimate of the situation must be based upon the largest and most far-seeing considerations. It must be in no narrow sense partisan, it must not be provincial, it must not be ignorant. In speaking, therefore, to the three groups of points raised by the distinctions just drawn, we are frankly dealing in a purely tentative manner with the more obvious and obtrusive angles of the case as they present themselves in terms of our current practices and prejudices.

Taking the matter from the point of view of the colleges first, it is clear that if the junior-college movement in the high schools develops with rapidity, there will presumably be a material decline in the number of Freshmen and Sophomore students in our strictly collegiate institutions. This result will be welcomed enthusiastically by the administrative authorities of many of the larger institutions, which are literally staggering under the press of undergraduates; it will be much less enthusiastically greeted by the small and struggling college to which numbers are absolutely indispensable for its continued life. We may, therefore, reasonably expect to hear from these latter sources a great deal about the indispensable value of a four-year college course, of the unwisdom of interrupting college life abruptly in the middle and subjecting the student to the necessity of orienting himself afresh in a new community; of the undesirability of remaining too long in a single institution like a high school, of the unwisdom of foregoing the larger atmosphere of the bona fide college, etc.

It seems not altogether improbable that we may for a time meet in an aggravated way the type of criticism now universal in every well-bred college where it is good form to complain of the poor training with which Freshmen come up from the high schools and academies. It seems not improbable that by virtue of the

fact that a considerable number of schools may be tempted into this advanced work prematurely, and that they may fail to secure reasonable results thereby, we shall have to recognize a great deal of such criticism as well founded and just. On the other hand, it is to be said that the experience of the University of California with the students of a number of the junior-college high schools has shown them abundantly able to carry the advanced college work. In many instances they have done this even better than the students trained immediately on the grounds. Colleges which have been receiving students from the Joliet school and from the Lane and Crane technical schools would, I am sure, in many instances give an absolutely identical verdict. The college is of course entirely justified in asking that if students are to be received into its advanced courses they should really be able to carry their work with success. It may well occur that for a time, if not indefinitely, the colleges will be justified in regarding credentials from these institutions as subject to confirmation by the manner in which the later work of the student is conducted. This practice obtains in the handling of exchange credentials as between institutions of strictly collegiate rank, and need not be interpreted as containing any invidious reflection upon the persons party to it. It does not appear to the present speaker that the colleges have anything to fear from the dangers which are intrinsic to the principle of the junior college based on the high-school foundations except the loss in student attendance, and this, as has already been repeated, is to most of the large institutions a welcome and not an unwelcome prospect. Friction of adjustment there undoubtedly will be, and the soul of the temperamentally conservative kind is sure to be troubled by this new program. Others need feel no solicitude, and on the contrary may justly welcome the movement as in the line of wholesome educational progress, and as one which it behooves the universities to foster and aid with wise counsel and kindly sympathy.

From the point of view of the schools it seems clear, as has been earlier indicated, that the addition of one or two years of college work is fraught with some dangers unless the financial support for the enterprise is reasonably generous, unless the qualifications of the teachers are thoroughly sound, unless the laboratory and library facilities are adequate, and unless the local demand for such an institution is genuine and reasonably energetic. To undertake such work without adequate equipment of staff and

teachers is seriously to overstrain the extant resources of the school both in personnel and in equipment, is to invite failure or very mediocre success, and therefore in the long run is likely to sacrifice public confidence and set back the general movement because of shortcomings which are intrinsic to the local situation and in no sense to the system as such.

The interests of the general public are fundamentally touched at every point of the situation. Ambitious principals and superintendents are likely to be injudiciously stimulated to premature developments of the junior-college movement in communities which are financially not able to afford proper support, and which really represent too trifling a demand to justify the necessary expenditures. On the other hand, phlegmatic or reactionary school authorities are likely in some communities to discourage and unduly postpone the development of institutions of this type where the community is abundantly able to afford support, and where a service of unquestioned value could be rendered both to the community and to its young people. Communities may certainly demand that institutions of this character be peculiarly sensitive to local needs and that the junior college be not simply an ambitious attempt to copy the first two years of the conventional college program. The whole question of the system of taxation by which these institutions are to be supported and the relation of that system to the support of state institutions requires careful and thoughtful consideration. In states with a strong and well-organized state university there is no reason why the most intimate and helpful co-operation should not exist as between the state and local institutions. The one thing which the communities ought most strenuously to insist upon, and the one for which it is perhaps least likely that there will be intelligent appreciation in advance, is the need of thoroughly competent and well-paid instructors to carry on this new work.

It would, in my judgment, be a great mistake to view the movement as purely an administrative rearrangement of our college work. The meaning of the matter seems to me to lie much deeper than that. If I mistake not, it is one symptom simply, but one fraught with immense potential consequences, of a renaissance of communal interest in higher education, of which the first great wave gave us our noble state universities and our agricultural and engineering schools. This, which has been gathering strength for several years in the evolution of the high school proper, promises

in a similar way to bring opportunities for advanced vocational training to the very doors of thousands of boys and girls previously denied them, to offer to thousands of others who really are prepared to profit by them the various forms of collegiate education, and in general to disseminate in the commonwealth more widely than ever before the desire for sound learning whose perfect fruit is sanity of judgment and sobriety of citizenship.

The trend of the forces of reorganization in the later years of secondary education. In concluding one of the important sections of his monograph on the junior college, Professor Koos sketches the trend of the forces of reorganization as they affect the later years of secondary education.¹² Coming as it does from the most extensive investigation ever made of the junior college, this statement contains a note of authority and prophecy which can serve as a guide in formulating principles of reorganization.

Some of our higher institutions, among them both colleges and universities, on account of the grip of tradition and a selected persisting clientele, will doubtless be able to withstand for a long period the forces of reorganization. It is not unlikely, moreover, that there may be a place in the American system for a small proportion of institutions of the type that assumes that longer period of unapplied training before entering upon the work of the professional school. In the face of the apparently inevitable tendencies of reorganization shown, however, they must come to be regarded as atypical, the prevailing type conforming to the trend of reorganization as disclosed. The consummation of this type, bringing with it the upward extension of the secondary school by the inclusion of junior college years, will go far toward justifying those claims of the friends of the new unit who insist that it will place in the secondary school all work appropriate to it, will foster the evolution of the public school system, will relieve the university, and make possible real university functioning. It will at the same time abate in considerable measure the present-day college entrance controversy, which is the more acute because at present both secondary and higher institutions presume to give general training. For the current

¹² Leonard V. Koos. *The Junior College*. Research Publications of the University of Minnesota, Education Series, No. 5. 1924.

confusions will be substituted the clarifying influence of more unequivocally definable preparatory requirements of professional and other specializations.

The future of the university and of other higher institutions of polytechnic type in this impending reorganization is much more clearly discernible than is that of its sister institutions, the separate four-year college and the normal school or teachers' college. It is doubtless too early to essay prophecy concerning them that will approach realization in any significant degree, but at least some conjecture can be ventured. As admitted, a small proportion of the separate colleges, especially those with a ballast of endowment and a host of well-to-do and tradition-loving alumni, may be able to withstand the inevitable trend and remain institutions affording unspecialized training throughout a four-year period. Most of them, however, must make further accommodations to the trend, serving their generation in the way in which it insists upon being served. For the weaker units this will be as junior colleges which will draw their students from secondary schools in communities too small to warrant offering the work on the junior college level. In time, however, these junior colleges must go the way of the private academy in territory where the public high schools have seen a vigorous development. The remainder, for the most part in a better state of development than those just referred to, can serve in the dual capacity of (1) junior colleges and (2) senior colleges in which certain types of liberalized occupationalization and specialization are featured. Few such institutions will be able to afford the variety of opportunities for specialization of universities, but they can devote their energies and resources to one or a few, e. g., teaching, commerce, home economics, etc. In the remote future the junior college division for the reason given will atrophy and these colleges will then devote themselves exclusively to the senior college task.

If the future form and function of the separate college is problematic, that of the normal school or teachers' college is even more so. Perhaps, until standards of teacher preparation rise to appropriate heights, the normal school, like the private junior college as just predicted, will recruit most of its students from communities too small to warrant offering junior college work and from among those who desire this type of semi-professional training. As these standards are raised it is conceivable that the teachers' college with four- or five-year curricula will

come to articulate with the public junior college in such a way as to encourage the prospective student to attend there for two years beyond the present high school level and to transfer to the teacher-training institution at the opening of his third college year. It seems reasonable to expect that the general establishment of junior colleges will, by making the first two years of training on the collegiate level more easily accessible, hasten the elevation of standards of teacher preparation to the strictly professional level.

Although one may well question the validity of this prophecy of the future of the two types of institution last considered, one thing is certain, that the advent of reorganization of secondary school and university along lines involving the incorporation of the junior college plan will be reflected in them, for the reason that they must adapt themselves to the dominant contemporaneous organization of the educational system.

THE UNIFICATION OF THE BACHELOR'S DEGREE COURSE¹³

BY WALTON C. JOHN

The first step in unification. When at last the régime of prescribed studies broke down for both entrance and college requirements, a more effective articulation was developed between the entrance and college programs of study. The adoption of the elective system in the entrance requirements was the first step in bringing into coherent relation the two great agencies of higher education. But now the articulation between high school and college has reached a state where there exists little opportunity for further advance in that respect. In many institutions flexibility has reached its limits; unrestricted entrance to college may now be gained by the presentation of a certificate from any first-class high school. But this flexibility in the high-school curricula has been paralleled to a certain extent by the rapid expansion of the free elective system in the college. Thus an undue flexibility has developed which has taken nearly all backbone out of higher education in many institutions.¹⁴

¹³ *Requirements for the Bachelor's Degree.* United States Bureau of Education Bulletin 1920. No. 7. Pp. 240-244.

¹⁴ The plan of comprehensive examinations, adopted by several of the leading colleges of the East, should be a partial remedy for the weakness caused by undue flexibility in the entrance requirements.

The second step in unification. The next step in unification is the providing of a groundwork of studies which will weld the systems of secondary and college education into a whole without losing the benefits of the elective system. Such a plan must provide a broad distribution of fundamental cultural and tool subjects from the definite standpoint of a seven- or eight-year course. An excellent distribution now exists in the majority of schools both for the entrance and college requirements, although in some cases it may be possible for students to specialize too early at the expense of a broad foundation in liberal culture. The (data upon which this discussion is based) show the possibility of a more unified bachelor's course on the basis of four or five of the fundamental subjects which are prescribed both for entrance and for the college. English, language, mathematics, history (social science), and science are prescribed both for entrance and graduation by nearly 40 per cent of the institutions listed, the amount of the joint prescription varying from 34 to 79 per cent of the eight-year period. About 75 per cent of these colleges control the prescribed work in at least three fundamental subjects, such as English, language, and mathematics, from 27 to 79 per cent of the eight-year period. In over 90 per cent of the 101 colleges of our list the average total requirements of subjects prescribed jointly cover over 60 per cent of the eight-year period. This unity, as far as prescribed subjects are concerned, gives a true basis for continuity in the different subjects, although in some instances needless duplication results. With this evidence of the actual control by the college of the combined curricula, it is clear that it lies within the power of the college to further determine such distribution and concentration of studies over the eight-year period that will insure a thorough as well as a broad scholarship. In order that this result may be accomplished, both educator and student should conceive of the college course as a single unit of seven or eight years. Within this period the candidate for the bachelor's degree should be permitted to elect, preferably at the beginning of the eleventh grade, a fundamental distribution group of a minimum of four or a maximum of six subjects. Students electing the sequences recommended by the college would be counted and graded as regular candidates for the A.B. degree, while those who follow the usual high school program would plan their work in harmony with the general or vocational aims of the high school. If a student should enter high school, not desiring to become a candi-

date for the A.B. degree, and should change his mind in the twelfth grade, he would then be obliged to complete the necessary sequences in order to be in line for the A.B. degree. While some loss of time might be entailed, yet the student would not have to lose more than was necessary to give himself a mastery in those fundamentals deemed essential by the college. A similar delay is often experienced by the candidate for the M.A. degree who finds that he has not given enough time to his major subject during the four years of undergraduate work to insure graduation in one year after receiving the A.B. degree. In such cases the candidate must spend a half year or more in supplementing his major work.

The sequences determined by the college are to be as free as possible from gaps in order that continuity and concentration be insured. Useless duplication of subjects should be avoided. A final examination covering the entire ground of each sequence might well be required of all A.B. candidates in addition to the usual term or annual examinations.

No great difference exists between the plan suggested and the customary plan of the major and minor option. At least one major sequence six or seven years in length should be required. A second sequence five or six years in length would support the first. These sequences should be the basis of professional specialization. Two tool sequences from three to four years in length ought to begin early in the course so that they might be of help to the student in his major studies.

From the standpoint of distribution the sequences chosen should lead to a broad foundation in liberal culture, while from the standpoint of concentration they should lead to scholarship and professional attainments.

Suitable sequences may be determined for those who expect to be ministers, literary workers, teachers, lawyers, doctors, agriculturalists, engineers, commercial leaders, social workers, home economists, and the like. If such sequences be properly developed there will also be opportunity in each case to develop the motor side of higher education, an element often neglected in the non-professional courses of liberal arts colleges. The knowledge gained by the student in college should have some practical tests and applications in real life before graduation day, in order that he may not be thrown into the whirlpool of the world's activities with theories and visions only. The entrance of the professional aim into the courses would tend to invigorate

the entire program by giving each student important incentives based on real interest in the work at hand. The difference between the vigor and tone of the work of the liberal arts colleges and the professional schools, such as law and medicine, is very noticeable. The addition of a lawful stimulus due to professional interest should be a powerful element in making for discipline and first-class scholarship. While independent and reflective scholarship must be safeguarded from the mere routine of professionalism, there is great need of more continuous and purposeful effort on the part of the students of liberal arts colleges.

Present tendencies toward a unified eight-year course. For a number of years several universities and colleges of high standing have taken the initiative in outlining a part of the bachelor's degree course in terms of the entire period (eight years). Ohio State University and Ohio University make the following requirements:

In high school and college together the student must secure credit in at least two languages other than English. For those who enter with 6 units in language other than English, the college requirement is 8 hours; for those with 5 units, 12 hours; for those with 3 units, 20 hours; for those with 10 units, 24 hours; for those with 1 unit, 28 hours; for those with no units, 32 hours. Natural science, social science, and mathematics are also dealt with from the standpoint of the 8-year period. (The high school unit equals 4 semester hours.)

The University of California offers a unified course through its combined high school and junior college requirements.

The University of Pittsburgh makes the following requirements: Eighteen credits (secondary and college included) must be taken in each of the distribution fields exclusive of specifically required subjects; courses in English 1 and 2 are counted in satisfaction of major requirement. Likewise 18 credits (semester hours) in some foreign language (courses taken in secondary schools to be included), or 12 such credits for those who offer 12 credits in Latin or Greek; and 12 in some other foreign language. (The high school unit equals 6 semester hours.) Other definite requirements are made for both the A.B. and B.S. degrees on the basis of both secondary and college work.

Vanderbilt University states that the required subjects of the freshman year are grouped with special reference to the continuation of the leading subjects offered for admission.

Teachers College, George Washington University, permits the

substitution of college electives in place of foreign language, history, and biology, which are a part of the list of prescribed subjects, "to the extent that approved secondary school work has been done in them." But "the foreign language requirements must fall in one language, while in history it is required that a survey of the world's history be obtained."

Beloit College requires that "where 4 units of foreign language have been presented for entrance, the student must complete 12 hours of foreign language work of college grade; where 2 units have been presented, he must complete 18 hours; where no foreign language has been presented, he must complete 20 hours. Any student presenting less than 2 units of foreign language at entrance shall be required to complete 132 hours for graduation" (8 hours more than the usual requirement).

Carleton College requires that students must complete for the A.B. degree six years in foreign language in secondary school and college, of which two years must be in Latin and two years must be taken in college. The requirements for the B.S. degree are stated in a similar manner, but only four years are required, and Latin is not specified.

The University of Chicago has developed the idea of continuation to a marked degree. "The attention of students is drawn to the fact, as explained below, that certain subjects are required which may be taken either in the high school or in the college. It is urgently recommended that as many as possible be taken during the high-school course. Students who are preparing for a professional degree or for specialized work will materially increase the opportunity for freedom of election by adopting the following suggestions for their high-school work:

"A student is advised to take throughout his last year of high school some subject other than English which will form the basis of the continuation group of his first year in college. Proper subjects for this continuation group are history, Greek, Latin, French, German, mathematics, physics, chemistry, physiography, and biology. This study may form a part of the principal or the secondary group."

The college requirements are built upon these continuation groups in such a manner as to obtain adequate distribution and concentration.

Harvard University obtains continuity and concentration to a considerable extent by stressing the entrance requirements in English, French, and German. Students who pass the special

examinations in these subjects on entering college are able to pursue their elective subjects with greater freedom.

The examples just cited show a growing recognition of the unity of the bachelor's degree course. With few exceptions, however, foreign language is the only subject that has definite recognition. When approved sequences in English, mathematics, science, social science, and vocational subjects are also prepared, it will be possible to unify the college course to a much greater extent throughout the entire eight-year period.

Such sequences in fundamental and tool subjects would tend to bring an essential unity into the bachelor's degree course over the entire country.

Principles derived from a study of the reorganization of secondary education. The existence of an educational practice is not certain proof of its soundness. The divisions within American schools illustrate the use of the trial and error method.

Unless the present disparity between administrative units can be justified by a disparity among local educational needs, secondary education should be reorganized so as to meet the actual needs.

Varying lengths of the elementary-school course indicate the possibility of effecting economies of time in certain school systems.

Excessive duplication of required subject matter in successive administrative units indicates ineffective organization.

Differentiated courses within the compulsory attendance period are desirable.

School courses must be reorganized whether administrative units are or not.

All organization within the schools should be judged as appropriate to the American system of education just in the degree to which it makes for continuous and uninterrupted opportunity for every pupil.

Effective democracy implies the highest possible intelligence in all the members of the democratic group.

A democratic school system must provide enough common elements of training so that the thinking of the community can be guided along similar lines.

A democratic school system must provide variations in the training offered to pupils of different capacities and interests.

In order to provide the future members of society with requisite common elements of and variations in training, the uniform program of the latest elementary grades must be reorganized.

Any satisfactory articulation of administrative units requires that teachers and administrators understand the purposes and methods of the units above and below their own units.

No attempt should be made to establish a junior college until the adequate financing of a community's secondary education is provided.

Whether or not all secondary education is conducted under one or more administrative units, such education should be unified so as to provide adequate sequences in the major fields of instruction.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Why has American development a longer period of preparation for secondary schools than foreign countries have?
2. How do you account for the fact that children of the northern states require eight or nine years for the elementary school, while children of the southern states require only seven?
3. What guarantee is there that the reorganization of secondary education would remedy the articulatory difficulties?
4. What is meant by a *basis of common thought*? In what courses is such a basis developed?
5. Can a basis of common thought be laid by means of the junior high school organization? Discuss by referring to specific elements of subject matter and forms of social organization.
6. Trace the development of junior high schools.
7. What do we mean by elementary education? By secondary education? By collegiate education?
8. Judging from Shaefer's account of different plans of reorganization, which plan seems most suitable to you? Defend your choice. Are there additional advantages or disadvantages for any of the types?

9. Why is the junior high school able to administer a more flexible promotion system than that of the elementary school?

10. Formulate five principles which should govern the articulation between junior and senior high schools.

11. What evidences have you seen of coöperation of colleges and high schools?

12. What evidences have you seen of college domination of high schools?

13. In what ways is the organization of junior colleges likely to affect the relations between high schools and colleges?

14. Many high school pupils are said to pursue a series of elementary courses in different subjects. How can the reorganized school aid pupils in pursuing longer sequences of courses? Show that such sequences are possible even in a four-year high school.

15. Compare the consecutiveness of a high-school sequence with that of a college sequence or major.

16. Discuss the reorganized system of secondary education as a national plan for higher education from every angle that you can.

17. Evaluate the principles at the end of this chapter.

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PART VI

CURRICULUM PROBLEMS

CHAPTER XIV

THE OBJECTIVES OF SECONDARY EDUCATION

Diverse attitudes toward the curriculum require a clear statement of objectives. Foremost among curriculum problems are the problems of deriving and formulating adequate objectives of high-school education. Earlier discussions in this book have implied certain general objectives, but a discussion of curriculum problems requires a more specific treatment of objectives.

Four attitudes toward the high-school program of studies are maintained in educational writings and are often exemplified in curriculum practice. First, it is maintained that the program of studies needs frequent revision so as to eliminate or add certain subjects. This attitude may be classified as radical, and in actual practice, may be very radical because it leads to the adding or dropping of subjects before sufficient investigation of their merits has been made. Second, it is maintained that the program of studies has universal value if the subjects are presented in a given manner. This somewhat conservative attitude is sometimes forcefully defended by the excellent practices of superior teachers who, by their skill, obtain results which are seldom attained by the rank and file of teachers. Third, it is maintained that the existing program of studies consists of subjects which may be variously treated so as to meet the needs of various groups of students by the use of the same content. Like the second, this conservative attitude arises from a strong

belief in the skill of teachers. By tending toward a loading of the program with traditional subjects this attitude may lead to neglect of newer and, for certain pupils, more valuable subjects. Fourth, it is maintained that the program of studies is valuable but insufficient. This progressive attitude has the distinct advantage of permitting curriculum makers to hold fast that which is good and at the same time be ever alert to find new subject matter which will supplement in desirable ways the old.

The selection of one of these attitudes for adoption constitutes a problem which requires analysis and counsel. Such examination and counsel should lead one to review educational objectives, the derivation of such objectives, and the utilization of such objectives in curriculum making. The counsel which is provided in the following pages supplies the advice of four men eminent in their respective fields: Colvin in educational psychology; Smith in educational sociology; Bobbitt in curriculum making; and Charters in activity analysis and curriculum construction.¹

THE SOURCE OF EDUCATIONAL OBJECTIVES²

BY S. S. COLVIN

Education is directed learning. There can be no direction without a conscious mind setting before itself an aim or purpose. Education must be planned, it must have an objective to be education. We learn many things, things at times doubtless to our advantage, with no conscious goal before us; indeed with no conscious goal existing in anybody's mind. Such learning is slow and wasteful. Sometimes it is worse than no learning at all. It is this sort of learning that has predominated to a great extent

¹ Three types of discussions appear in many of the chapters on educational objectives: (1) a discussion of general aims; (2) a discussion of indirect values; and (3) a discussion of direct values. The first of these types of discussions is omitted because the author has found that any class of prospective teachers can readily formulate the objectives for themselves. The second and third types of discussions are omitted because such discussions are already available in numerous books as cited at the end of this chapter.

² *School and Society*, XVII, 505-513. 1923. Abridged.

in the acquisitions of humanity in its struggle up from paleolithic man to the civilization of to-day. Great and far-flung objectives have not existed; education as far as it has been present has been concerned rather with minor purposes and near-by aims than with broad and comprehensive ends, compassing generations and embracing different nations and different cultures. The educative process has been narrow and restricted; the learning process has been broad and universal.

But man, to be man, must gradually extend the educative process until it approximates the learning process. Doubtless if this ideal were ever achieved in its entirety man would cease to be man, and become superman—a being whose vision could compass all the ages, whose wisdom could unerringly select the true from the false, and whose will could stand constant amid the stress of prejudice and the storms of passion to which human beings are the heirs. This infinite goal can never be achieved, perhaps, but we must progress nearer and nearer to it as we raise ourselves above the level of the brute and become more and more the man. This I take it is the great difference between man and brute, that man alone can be really and truly educated. *The learning processes of both are in their fundamentals extraordinarily alike, but the educative process belongs to man alone.*

To understand the human mind as human mind, we must understand it from the standpoint of aim, purpose, interest, intent. We can not understand it as the mere workings of neurone connections. These mechanical principles are helpful concepts, but they fail to consider the determining principles of the mind's operation.

The significant history of humanity is the history of its development not merely under the blind impulses and immediate desires that have dominated it, the efficient causes that have lashed and driven it on, but also under the direction of purposes conceived and executed—in a word under the leadership of final causality. This history is the story of its culture; this history is the epitome of its education. The deep, underlying material causes give the basis for its struggles, but the causes that are described by the word purpose give the vital meaning to its endeavors. Yes, man to be truly man must be educated, and to be truly educated he must conceive purposes and direct his learning in terms of these purposes.

Education has always set before itself purposes, more or less explicit. Sometimes these have been vaguely conceived, uncriti-

cally accepted and blindly followed, it is true; sometimes these purposes have been woefully narrow, sometimes they have been false and misleading—but purposes in some form or other have been present. Whence have these purposes—these objectives come? That is the problem.

Religion has been generally closely associated with education and its ideals have at times largely determined educational objectives. Hence these objectives have been looked upon as sacred, unchangeable, and eternal. Many of the objectives that religion has furnished have been worthy and highly commendable, but since they are alleged to be supernatural in their origin and since their validity is for all time and all circumstances, such objectives are barriers to progress and do not allow sufficiently for the continuous development of human knowledge and skill. Religion too frequently has decided what is the final truth, what is the ultimate moral code and has demanded that this particular truth and this explicit code shall be taught in all times and for all peoples. Now the intent of religion in all these instances has been high, its motive sincere and I grant that objectives determined by religious beliefs are far better than no objectives at all, and frequently better than objectives obtained in other ways, but the point I wish here to make is that such objectives are partial, one-sided and too inelastic to permit their absolute acceptance.

Recently we have witnessed a re-emphasis of the state as the final source of educational objectives. The teaching of "patriotism" is urgently demanded and the individual is thought of in terms of his value in contributing to the national life. Sometimes this idea of the individual as merely an instrument for the realization of the purposes of the state has resulted in turning the schools into means for the attainment of a narrow and selfish nationalism. In the days before the Great War Germany was the outstanding example of this mistaken use of education to serve its peculiar national ends. This tendency in its most terrible forms we to whom freedom is still more than a word abhor, yet in the milder and more subtle forms we endure and at times apparently welcome. Well-meaning and patriotic people in our own land demand that our texts in history and similar subjects contain this or that and exclude this or that. The patriot of this type would have us believe that neither collectively nor individually can the people of this country do any wrong in their attitudes and actions toward other nations; or

if we admit that wrong may exist, then it is thought that we should do all in our power to suppress the facts.

Granted that it is possible to maintain this attitude when other nations are concerned, we at once find ourself in a greater difficulty when we try to adjust ourselves to a national patriotism within our own borders. Writers of history texts must have an eye to that part of the country in which the book is to be used. History must be taught somewhat differently south of the Mason and Dixon line than it is taught north. The facts are not the important things, but what the children are taught to believe as facts. So are emphasized sectional misunderstandings; so are perpetuated blind, unreasoning prejudices.

Even more dangerous to our democracy than national and sectional prejudices embodied in educational objectives is the attempt of various classes in our social organism to impose on our schools their own peculiar aims and purpose, thus creating a divided and distrustful people—class against class, loyalty against loyalty. Such a division when carried to its logical extreme means the destruction of democracy either with resulting anarchy or with the dictation of the ultimately dominating class in a tyranny more hateful than that of an oriental despotism. As Dewey has well pointed out, the test of a true society is found in an organization of groups each with its own particular loyalties, but each capable of a sympathetic understanding of all other groups and each with a higher loyalty for society as a whole. A class-consciousness that is turned in on itself, that seeks its own advantage at the expense of all else, that has no common humanity, will ultimately end in its own destruction, but will like a poisonous growth destroy the whole social organism with it. These class prejudices have no place in our schools. They cannot be allowed to enter in to determine objectives in our American education. I dread the formation of every special and exclusive school—the school for the aristocrat and the school for the toiler, the school for the sectarian and the school for the free-thinker. The children of the American people must be educated in a common school, supported by the entire people and attended by the children of the entire people. Special schools set up to realize special objectives and to inculcate into the mind of the young special propaganda cannot spread without bringing social ruin in their trail. We must fashion our education on the basis of our common understandings and agreements, not on our misunderstandings and contentions.

When Rousseau changed the emphasis in education from conformity to the adult standard to that of the child he set the scheme of things educational topsy-turvy. His doctrine and that of his followers contain implicitly two assumptions, one of which is fundamentally true, the other, I believe, fundamentally false. The first is: if we are to teach the child properly we must understand the child and we must adapt our educative methods to his nature, considering his abilities and his interests. This point of view has found various concrete expressions and has worked itself out beneficially in many ways.

The second implicit assumption is: if we understand child nature we shall discover not only the methods to be followed but the aims to be sought. This second assumption, I believe to be largely false, and generally misleading. The child's interests must be appealed to if he learns properly and economically. This is a self-evident statement. It is not true, however, that in the child's immediate interests the objectives of the educative process can be found and formulated. Again, in all learning self-expression is desirable, but it does not follow from this that self-expression as such is a supreme educational objective. Neither does the truth of the statement, "Purposive activity is one of the greatest motives in leading the child on in his studious endeavors," justify the further statement that the aim of education is to lead the child eternally from one purposive activity to another or that purposive activity is the final goal of the educative process.

Child study has served to accomplish great results in our methodology, but it has been barren in giving us any ultimate educational objectives. Sometimes its results when translated into terms of objectives have been not only barren but strange and misleading. In the days when the Recapitulation Theory held sway it was thought by some that the child must go through all of the real and fancied experiences of his savage forebears and his pre-human ancestors in order to be properly educated. To-day we are sometimes led to believe that pure spontaneity is in itself the educational goal, irrespective of where that spontaneity leads. The ship set adrift will catch the winds in its sails, will set for itself a brief and ever-changing course, but at length it will lie stranded on the beach or grind itself to pieces on the jagged reef. The child must be understood in order that he may be guided.

I am sure that you will agree that education has failed to find its ultimate objectives in the nature of the child, although

it cannot gain its objectives without understanding the interests and purposes of child nature. In recent years an attempt has been made to set up educational objectives in a somewhat different manner and by a method that has in it a good deal of plausibility, but an ultimate fallacy. It is argued that the child must be educated to conform to his environment, hence the environment must be studied to find in it those elements that shall be the ends of the teaching process. After the analogy of the job-analysis a survey is made of the life in the world about the child to find in it those items of importance for the present and future activities of the child. What words should the child learn to spell? Answer, those words in the common written vocabularies of children of his age and grade, with just a few added year by year as he progresses toward adult life. He surely will be called upon to write frequently the thousand most common words in the English language; hence he must be taught to spell these words. In a similar way his knowledge and skill in arithmetic must be measured by his present needs and his probable future needs. Unusual processes and difficult and relatively useless skills are not to be taught for they will not function. It is maintained that these unusual and useless elements must be determined by studying the most common arithmetical practices in school, then excluding from the curriculum those elements that are uncommon. In the same way the important facts and principles in geography, social science and in the physical sciences are to be discovered and formulated into educational objectives. This is all very plausible, and within certain carefully set limits entirely legitimate.

These objective determinations of educational values by the use of statistical methods is again illustrated in connection with the present widespread movement to measure educational products through standard tests. These educational scales and measurements have been largely derived from a study of the achievements of school children under present conditions. The standards are determined by the prevailing practice. It is found that the median performance of children of certain ages and certain grades is this or that and this performance is taken as the desirable achievement without any consideration whatsoever beyond the results obtained. So it is happening that the standards set up by these tests are being accepted as the desirable objectives of teaching without any further proof of their validity than that offered by the test results themselves. Thus the safe

way of procedure is being entirely reversed. *Tests are valuable only in so far as they measure the achievement of a worth-while educational end already established. They are grossly misleading and even dangerous when taken themselves as educational objectives.*

Here is a new variety of educational determinism, just as subtle and just as undesirable as that pointed out recently by Professor Bagley in his searching analysis of the assumptions some have made as to the nature of mental testing. Bagley argues that by an unwise use of mental tests individual children may be condemned to a type of education that denies them a real participation in the spiritual heritage of the race. An unwise use of educational tests (extremely valuable when properly employed) may condemn the entire school system of the United States to a standard that limits attainment in terms of itself and makes progress toward better methods and better results extremely difficult if not impossible. *To know what is has great importance, to be satisfied with what is precludes all hope of development.*

In the above review of the various sources of educational objectives I have kept in mind the fact that while they all possess a certain validity not one in and of itself is capable of setting up completely trustworthy and desirable goals of educational endeavor. Each possesses value, but that value is partial, and when considered by itself may be completely misleading. The claims of religion and of the nation must be evaluated and given their due weight in the formulation of educational objectives. The aspirations of various social groups must be taken into account and the purposes of various philanthropic and patriotic societies recognized. But the attempt from without to frame the educational aims of the schools cannot be yielded to completely with safety. Neither can the attempts from within so far referred to be considered as having really solved the fundamental problem of what should be taught to the child. Those who seek the complete answer in an analysis of child nature and in a blind following of the child's desires and purposes are sailing the educational sea without chart or compass, while those who hope to determine educational aims by an analysis and standardization of what is offer no method of directing the educative process toward more ultimate and desirable ends. *Educational objectives must be determined from within by a sound philosophy of education.* In

this way, and in this way alone, is it possible to set up worth while and relatively permanent educational objectives.

It is the business of a philosophy of education to evaluate human experience, and to discover those values most significant in human attainment and progress. It is not the function of educational philosophy merely to step in where disputes in the theory of education arise and settle these disputes. Educational philosophy must act on its own initiative. It must act constructively. At times it may serve as an umpire, but this is merely one of its minor offices, not its chief business.

In evaluating human experience it must make certain necessary assumptions among which the following seem to me to be particularly important:

1. The final aim of education is to adjust the individual to his environment, not only present and real but future and ideal. This means that the child is to be brought in contact with reality, but not a narrow and immediate reality. He is to know not only life, but how to grow and live in the broadest sense of the word.

2. The way in which the child is to be adjusted to reality is by teaching him the truth in regard to reality, and in inspiring him with a desire to find the truth.

3. Since all truth can not be compassed by any human being, no matter how great his intelligence or how persistent his efforts, and since truths vary greatly in their human values, the philosophy of education must select among these many truths those that are most significant and practical.

4. Those elements in human nature that are the most fundamental, the great instinctive tendencies, have an intrinsic value that must be recognized. We may transcend instinct but never eradicate it. Any scheme of education that does not give place for those eternal values, either actually or vicariously, is incomplete.

5. The permanent achievements of the race, those won through countless ages of toil and suffering, must be accepted as valid until they can be proved unworthy and until a substitute for them can be provided. Education must be largely the transmission of the culture of the adult generation to that of the child. Not all things can be doubted, every attainment set aside. Youth can not dictate, it must follow. An age which seeks its philosophy in the flapper and its art in jazz has inverted its point of view and must sooner or later correct it.

6. Those things are most valuable in human life that contribute to sympathies and understandings; that stand against narrow prejudices and blind hates. The world to-day is threatened as never before with class prejudices and national hatreds. These menace the very foundations of civilization.

7. Human freedom is a necessity for real living. Educational objectives must lead to the development of individuals who can live their lives in self-restraint, and mutual cooperation, free from petty laws and artificial social restrictions, who shall be laws unto themselves not because they are above law, but because they have comprehended and intelligently accepted the fundamental laws of human nature and society.

8. These great truths of human life and experience when recognized and comprehended must be the final objectives of education. From these down to the lesson of the particular day lead mediate objectives and immediate aims. They determine the subject matter of the curriculum and the emphasis that shall be placed on its various elements. The facts that are here embodied are to be taught as they are, not as we would like to have them. The will-to-believe must be banished from the classroom, all propaganda as such removed. It is the teacher's sole business to teach to the child things as they are. This is the purpose that should dominate the teacher and the pupil alike—the purpose of seeking the truth and knowing the truth. So, since truth is never complete but always in the making, the spirit of teaching and of learning will be one of constant endeavor and unending progress. What is known will be accepted until it is set aside by some higher and more complete knowledge. Facts will be important until disproved by other facts. Hence there will be stability in change. The world will be real but always a bit new, and purpose will develop into further purpose not for the sake of purpose, but for the sake of truth which the learning mind purposes to find and comprehend.

THE SOCIOLOGICAL ASPECTS OF OUR EDUCATIONAL AIMS^a

By W. R. SMITH

Sociologists are in the habit of proclaiming that the central field of knowledge of most worth and the human characteristics most needed in our modern highly differentiated society are social.

^a *American Journal of Sociology*, XXIV, 81-95. 1918. Abridged.

They likewise insist that increased recognition be given to sociological principles as the basis of efficient institutional management. If these propositions are to be maintained, the sociologist must be prepared to accept increasing responsibilities for showing how these social qualities may be developed and for applying the principles of his science to the clarification of institutional problems.

An analysis of the specific purposes of our present educational system will show at least three things: first, how far the present directors of our schools are from an intelligent sociological view of education; second, some of the steps already taken by our most progressive educators to introduce socialized materials and methods; third, the urgent need of sociological aid in further elaborating ways and means of developing social-mindedness through school training. To get at the problem it is necessary to analyze the social aspects of the four specific objectives entering into our present educational aims, that is, the development of physical vitality, of cultural attainment, of vocational efficiency, and of social service.

Some aspects of physical training. With regard to the first objective of education, the development of physical vitality, the individualistic conception alone has prevailed. A sound mind in a sound body, or more specifically a sound body for the sake of a sound mind, has been the avowed purpose of the educator. In order to attain organic soundness, physical fitness, and good health for each individual we have established gymnasiums, taught physiology and hygiene, condemned injurious habits, outlawed petty vices, and built up a medical profession. In the preliminary stages of all these the welfare of the individual was practically the sole aim. If the welfare of the social group entered into the public mind at all, it was only in a hazy and indefinite sort of way.

In recent years, however, as the intimacy of social contact has emphasized mutual dependence, there has been a growing tendency to think and talk about the public health, that is, to consider physical well-being from the standpoint of the social group. It is realized that individual health and strength is no adequate defense against unsanitary conditions, monotony and overstrain in industry, or epidemics of contagious diseases. Something more than personal hygiene and individual fitness is required. We must have a social hygiene and social health control.

In pursuance of this new attitude we have developed an extensive body of regulative laws limiting the physical freedom of the individual for the physical protection of the group. Laws have been enacted establishing the eight- or nine-hour day, prohibiting child labor, requiring sanitary shops, forbidding the sale of impure food and drugs, enjoining vaccination, and supervising medical practitioners. Constructive social health measures are taken in the opening up of municipal and national parks, in providing public playgrounds and amusement centers, in establishing quarantine regulations, in draining swamps, and in constructing sewers. Public hospitals exist in every center of population, physicians are compelled both by social pressure and by statute law to attend to the needs of the poor, and it is scarcely an idle dream to look forward to the time when the whole field even of curative medicine will be socialized.

Still more social in its outlook is the plea for a sound physical heredity. We are evolving a program of eugenics which has been up to date primarily concerned with efforts to guarantee to coming generations a better physical foundation on which to build an efficient society. Marriage laws are being more carefully drawn, social diseases are being scientifically attacked, and efforts are being made to see that dependents, defectives, and delinquents have less opportunity to multiply their kind. While something is being done, and much more might be done to advance such a program by developing a sense of individual responsibility for guarding heredity, the classes of people who need to be prevented from reproduction cannot be reached by an individualistic appeal. Social regulation alone can attain the results desired, and this regulation must be based upon a social intelligence and a social conscience which do not now exist and probably never will exist until we have a more social type of education.

To lay an adequate foundation for this new field of legislation and to develop efficient social control over physical well-being it is necessary to begin with the young. As our school day and year lengthen and the average number of years of schooling increases, the school becomes a greater force in determining the social attitudes as well as the intelligence of our citizens. It therefore becomes increasingly important, not merely to develop sound bodies in our individual pupils and to teach personal hygiene, but to develop sane ideas of preserving the health of the larger group and to teach social hygiene. The youth must be trained, not merely to develop and conserve his

own strength, but to safeguard that of his fellows. Just as proper habits or health are essential to individual welfare, so proper obedience to social health measures is essential to social welfare. Moreover, a mere knowledge of social hygiene will not accomplish the desired results. A social consciousness must be built up that will respond to public regulation, and a social consciousness must be developed that will recognize and protect the rights of others. Since in the long run no law can be more effective than public opinion requires, it is necessary to see that individual will is reinforced by group imperatives. Health legislation and social hygiene will remain comparatively impotent until they have the support of a trained public mind, and the chief agency for developing that must be the public school.

That educators are beginning to recognize this is quite evident in their changed attitude toward physical training. Social hygiene is being emphasized even in the primary grades. Organized play is superseding the calisthenics and spasmodic semi-individualistic play of the past. Team games are succeeding individual contests. Quarantine regulations are being more strictly enforced. Public-school physicians, dentists and nurses are taking the place of the individual medical attention formerly received. The textbooks in physiology and hygiene are embodying much social material. Teachers are recognizing more fully their obligations to the public and are emphasizing the social responsibilities of the citizen in maintaining the public health. Many schools are models of sanitation, and certain cities, such as Gary, are looking after sick pupils better than they would be looked after at home. All of these things and many more have been started in our highly socialized schools, but to make them still more effective and to universalize them it is necessary to inbue all educators with social ideals.

Social aspects of culture. With regard to the second objective of education, the attainment of culture, public opinion is scarcely less individualistic than with reference to the development of physical vitality. The education of the past has striven to produce cultivated individuals. When analyzed, the popular notion of culture breaks up into three parts—æsthetic taste, refinement of manner, and moral idealism. Thus the cultivated individual has been expected to appreciate and know something of literature, music, and art, to possess some degree of grace, good manners and self control, and to have wholesome impulses, refined sentiments, and ethical attitudes. Nor can we question that the

attainment of these things is a desirable end of cultural education. But it is not the only end. There is a social aspect of culture above and beyond these things. One might possess all of these individual characteristics and still fall short of cultivated citizenship. Since the school is a public institution, mere polished personality can never satisfy its cultural demands. Individual culture may be subjective and passive, social culture must be objective and active, and the culture for which a social institution stands must eventuate in social activities. The graduates of our schools should not merely exemplify individual culture; they should become active agents of group culture through institutional channels.

The weakness of mere individualistic culture may be shown with reference to each of the elements mentioned above. With regard to the æsthetic nature one may possess excellent individual taste and yet show execrable social taste. He may have artistic ideas of dress and yet array himself in barbaric quixotism. Fashion may dictate a costume that will exaggerate the defects and conceal the beauties of a society leader possessing unimpeachable personal taste. Likewise a housekeeper may have a sane natural taste in furniture and household decoration and yet follow a crude fad in her own home. A painter may have sound ideas of art, a writer a sound appreciation of literature, or a musician a sound love of music, and yet each of them follow some fantastic school into artistic absurdities. Individualistic taste in itself is not an adequate defense against the tyranny of fashion, fad, style, and conventionality. If education is to render effective aid in developing æsthetic sanity it must be social enough to provide constant group training where diverging ideals clash in a struggle for survival bitter enough to produce compromise. Æsthetic progress demands freedom for exercising individual taste, which can only be brought about in the atmosphere of friendly criticism and artistic tolerance.

Moreover, social welfare demands a social use of æsthetic taste and artistic appreciation. Civic art must have sponsors, public libraries must have promoters, and community music must have leaders. In a crowded world everyone with an artistic accomplishment is needed in social capacities. Where each one's work is narrow and specialized and often burdened with drudgery it is necessary to have public entertainment, social diversion, and mutual cultural inspiration. A painter may hoard his treasures, a potential literary master may lack the social incentive

to write, or an exquisite violinist may refuse to share his musical joys with others. It is no less a function of education to give this social direction to the spread of the fine arts than it is to produce individual artists.

As the possession of personal taste is no guaranty of artistic social service, so the possession of refined manners and individual self-control is no proof of refined public attitudes and social self-control. No amount of individual self-control will stop a panic in an army or a financial crisis. In other words, social self-control, or self-control under social pressure, is a somewhat different thing from individual self-control, and its development demands a different kind of training.

Likewise social morals are separate from, and supplementary to, individual morals. Some men with personal honesty do not hesitate to engage in an essentially dishonest business. Others who would not think of committing murder will deliberately make and sell poisoned drugs or adulterated foods. The ordinary man with plenty of public spirit will fail to aid justice by informing public officers of violations of the law, and a group of reputable business men will knowingly overvalue a bit of personal property taken under the law of eminent domain by their city or the state. In a similar way a social organization composed of honest individuals will fail to pay its debts, a church may stoop to gambling devices to raise money, a political party composed of patriotic citizens will defraud the public, and a group of sincere reformers will over-ride the rights of a large body of citizens. Dr. Ross has well shown that the great sins of the day are the results of a lack of a social conscience that will sense the indirect consequences of personal acts and carry over personal morals into social morals.

If the facts in the foregoing analysis show that personal culture and social culture are not identical and that an individual may possess the one and not the other, it is worth while to inquire how they may both be developed. In our present society education is the basis of culture. If the education is individualistic we may expect an individualistic culture. Only a social education where group ideals of art and conduct and morals are emphasized can result in social culture. Self-control under group pressure will never be established until people are trained to react sanely toward social suggestions from their youth up. A public morality that will approach private morality in effective-

ness must wait for a school training which will call for constant moral decisions in self-determining groups.

Social aspects of vocational efficiency. The third of our educational objectives, vocational efficiency, is also usually thought of from the individualistic standpoint. The purpose of vocational education as ordinarily expressed is to enable the individual to increase his income or to enable him to make a better living for himself and his family. But such a view shows a narrow vision. In our highly organized industrial society economic rewards are reciprocal. The income of any individual in any particular occupation depends in the long run upon the prosperity of his particular group, or even of the whole economic fabric of which his occupation forms only a part. Individual income is no more important than social income, and from the larger viewpoint the wage of a particular laborer or occupation group is no more vital a concern of the vocational educator than the general wage scale or the proper direction and control of vocational effort.

That every occupation has its social as well as its individual aspect may be made evident by specific applications.

Capital is the result of surplus effort and saving. The enormous increase in the productive power of the individual laborer of the present over the laborer of the past is due quite largely to accumulated supplies of capital goods with which he may work. This supply of productive capital has been built up largely because each worker in a useful occupation produces an economic surplus. It is the sum total of individual production that creates the social dividend which in the long run, in spite of a crude system of distribution, somehow accrues to the advantage of all workers. Productive agencies are so bound together in reciprocal service that whatever an individual adds to the total benefits not only himself but others as well.

There is also a reverse side to the record. If a vocation be non-productive or individually and socially injurious the whole economic fabric is weakened. A business failure is not merely an individual calamity—it is a social calamity. Any large percentage of business failures discourages industry and undermines general prosperity. The bungler or the slacker in his work not only lowers his own income, but casts discredit on his occupation, injures his fellow-laborers, and weakens the productive capacity of allied industries. Even more do the parasite and exploiter undermine general economic efficiency. An occupation may return individual profits and be honestly managed, but may in itself

be destructive. The dive-keeper, the bucket-shop manager, and sinecure office-holder are examples. Any sort of vocational efficiency must tend to eliminate such occupations. Moreover, most vocations have certain elements of hypocrisy and graft that need to be curbed. Good lawyers stimulate doubtful litigation, excellent physicians encourage useless calls, reputable ministers preach insincere sermons, efficient manufacturers produce worthless goods, honest real-estate dealers foster false booms, conscientious artisans conceal faulty workmanship, and energetic day-laborers kill time. None of these things is more individually culpable than socially harmful, yet the general condemnation of such practices imputes the whole guilt to the individual who indulges in them instead of sharing it with the community which endures them. If a cure is to be effected it must come as much through a change in the social attitude toward work as through improvement in the individual attitude. Social motives must be made to reinforce individual motives.

Another phase of vocational efficiency is seen in the necessity, under our latter-day methods of conducting business, of securing a spirit of cooperation in the worker. A high grade of efficiency demands that one be, not merely efficient in his own special field, but able to coordinate his work with that of his fellows. This requires an intelligence which can comprehend the whole process if it be in manufacturing, or the whole business if it be retail merchandising, or the whole institution if it be a profession. It further requires more than individual adaptability; it demands a willingness to sacrifice certain self-ends to the needs of the group or social ends. If labor organization is to benefit labor as a whole, not only must the individual workman join it, but he must own an allegiance that will reach beyond his special occupational union into the larger federations.

That we are beginning to recognize the social aspects of vocational training is quite evident in professional education. The minister is trained, not merely to look after the interests and increase the size of his flock, but to labor for the upbuilding of the whole community. The lawyer is urged by his law professors not only to win his cases, but to become an agent of social justice. We are demanding that the physician be a sponsor for social hygiene even at the expense of his own professional income. The virile teacher is expected to go beyond the confines of his school routine and carry his intellectual leadership into the community. Trainmen must keep trains loaded and moving,

miners must keep up the supply of coal, and steel workers and shipbuilders must keep the machinery of their trades busy. In every phase of our industrial system we are pleading the necessity of co-ordinated efforts and demanding the recognition of group needs as an important basis of individual labor.

If education is to be directed toward the increase of vocational efficiency, and all education is to some extent vocational, it is no safer to neglect its social aspects than its individual aspects. Just now we are in the midst of a campaign to vocationalize more specifically our public schools, and whatever may be our individual feelings we may be sure that it will partially succeed. The greatest danger in the process of vocationalization is that it shall be too narrow and technical in its aims. The only guaranty against this weakness is to see that social motives are instilled along with individual motives and that socializing methods are as much in evidence as individual instruction. We must maintain a broad enough curriculum to develop intelligent builders who take pride in their work, as well as efficient carpenters. We must increase industrial knowledge as well as train ingenious mechanics. We must make our teachers technically efficient, but not less must we make them broad-minded educators. We need skilled physicians and lawyers, but not less do we need organizers of health control and reformers of our clumsy legal machinery.

Individualistic v. organized social service. The final objective of education, social service, is the only one which is generally recognized as having special social implications. Even here the individualist in education still maintains his individualistic point of view. Social service may be looked at from the standpoint either of its subjective value to the individual or of its objective value to society. From the individual standpoint its purpose is primarily to develop personality or to fulfill one's personal duty to help others. From the social standpoint its purpose is to increase the effectiveness of social organization or to fulfill an organization's duty to help society. The essential divergence comes from the direction of the vision, whether one looks at himself as a component part of a group or at the group as a specialized part of himself. It is the same difference that exists between egoism and altruism as motives of human action. We give higher ranking to altruistic than to egoistic motives, even though they may, and often do, result in the same type of conduct. In the same way social service inspired by group motives is on a

higher plane than the same service performed through individualistic motives. This may be made clear by specific applications.

The basis of philanthropy is human sympathy. One may express his sympathy by aiding the individuals he knows or alleviating the misery he comes in contact with; or he may work through institutional channels, giving his aid to the organized agencies for human betterment. It is quite possible for one to be sympathetic and helpful, and all of us know people of this type, without being willing to contribute freely to organized charities. But we also know the weakness and dangers of purely personal charity. It is based on elemental feeling and is likely to degenerate into mere almsgiving. Organized philanthropy is superior because it is more likely to be constructive and is usually administered by trained workers whose sympathy is guided by intelligence and whose group loyalty keeps them from being led astray by unworthy personal appeals. Personal charity begins with the individual, while institutional philanthropy always proceeds from the group outward. Institutional service properly directed is not impersonal in the sense of losing the personal touch, but it does call for a higher type of devotion and demands for its support a more socially minded clientele. It is social service *par excellence*, and before it can be universalized requires an impersonal social sympathy and an educated social conscience.

In the same way civic service may proceed from either personal or social motives and be made either an individual or a group enterprise. A citizen may work for political betterment because it will improve his citizenship and give him a greater personal following, thus opening up a means of political preferment, or he may do the same work for the good of his city, his state, or his nation. While the results may be essentially the same the impulse to service is essentially different. It takes a higher type of personality to respond to the group or social motives than to serve from individualistic motives. We glorify patriotism because the patriot thinks first of his country and later of himself. Likewise in business a man may work with an eye single to the success of his own establishment or with an added conscious effort to promote business efficiency.

If we are to increase and improve through education the type of social service which springs from social-mindedness we should develop an educational system that will train our citizens as directly as possible for social activities. The only system of education that will do this is the one which emphasizes social

studies and gives continual practice in assuming group responsibilities. No past age has ever offered such a variety of institutional memberships and opportunities or has been able to stimulate through social organization such breadth of social-mindedness as we have in the United States today. It is the public school alone which seems to possess the breadth of purpose properly to co-ordinate social activities and to reach the child while he is plastic enough to make its teachings effective, that promises an adequate development of this necessary social-mindedness. Nor may we expect its possible service to be even approximately realized until it is more highly socialized in its teaching personnel, its curriculum, and its methods than it is at present.

We have pointed out the special need of social hygiene as well as of individual health instruction, the demand for social æsthetics, social self-control, and social ethics as well as for individual artists, individual self-control, and personal morals, the value of vocational responsiveness and idealism as well as of vocational efficiency, and the superiority of organized social service inspired by group loyalty over egocentric social service inspired by individual impulse and ambition.

THE OBJECTIVES OF SECONDARY EDUCATION⁴

BY FRANKLIN BOBBITT

In the world of economic production a major secret of success is *predetermination*. The management predetermines with great exactness the nature of the products to be turned out, and in relation to the other factors, the quantity of output. They standardize and thus predetermine the processes to be employed, and quantity and quality of raw material to be used for each type and unit of product, the character and amount of labor to be employed, and the character of the conditions under which the work should be done. Their predetermination of the finance is called their budget. The business world is institutionalizing foresight and developing an appropriate and effective technique.

There is a growing realization within the educational profession that we must particularize the objectives of education. We, too, must institutionalize foresight, and, so far as the conditions of our work will permit, develop a technique of predetermination

⁴*The School Review*, XXVIII, 738-749. December, 1920. Abridged.

of the particularized results to be aimed at. We are awakening to the obvious truth that when a long journey is to be taken, one of the most necessary things to know before setting out is the destination.

The administrative awakening to the need of determining with definiteness the goals of public education is coming surprisingly late. In the world of economic production it is axiomatic that nothing can be done until it is decided what products are to be turned out; but in the field of public education we have in large measure been building and organizing our huge plants and operating them full blast without having definitely predetermined the kinds of products which we are going to turn out. Exceptions, of course, must be made in the case of a few things, such as the ability to read, to write, to spell, to compute, to read maps, to express one's self in clear and correct English, and a few others. These matters are mainly taken care of upon the elementary level. The high schools for the most part have not particularized their objectives in terms of human activities or human well-being. The situation is well stated by Dr. Snedden:

"The great problems of secondary education today are, of course, problems of aim. The concrete, immediate aims which control the large majority of our administrative and pedagogic procedures in the American high school (and how very concrete and definite and exacting many of them are) are of quite unknown value. We have not defined them in terms of human good; we seem unable to estimate the value of the results achieved in our efforts to realize them. We teach our prescribed algebra strenuously and with some very definite objectives, but we flounder pitifully when we try to prove that these objectives are really worth while. We have refined and standardized our immediate objectives in teaching physics and chemistry, but what we actually attain by it all in terms of human well-being remains concealed in the obscurity of vague phrase and inadequate generalization. We drive our boys and girls hard up the steep slopes of Latin, French, and German, but we are forced to fall back on mystical and uncertain faiths in the endeavor to justify our driving of particular youths up these particular steep slopes.

"We have in reserve, of course, large, splendid aims which are alleged, finally, to guide the evolution and destinies of our secondary schools. Do we not freely use such terms as

'Character formation,' 'mental discipline,' 'self-realization,' 'social efficiency,' 'culture,' 'citizenship,' 'leadership,' 'intellectual power,' and a score of other unanalyzed general phrases, as expressive of our ultimate goals? And in these are there not summed up most of the purposes that really count in this life? It must be admitted that we do still live largely in a maze of faith (and fable) as regards education. . . . For, after all, our great fine aims in secondary education, expressed in tenuous even though aspiring phrase, are in reality only faith aims; in practice they rarely actually guide us in choice of ways and means; and we seldom stop to measure the tangible results of our teaching against the shadowy and ever-varying interpretations of these aims as set forth in books and journal articles."⁵

During the five years since Dr. Snedden's statement appeared, much, very much, has been done. The National Education Association Commission on the Reorganization of Secondary Education in its "Cardinal Principles of Secondary Education" has presented a statement of seven groups of educational objectives which should dictate the work of high schools. For each field they present a few examples of particularized objectives. A similar type of task is being undertaken by many superintendents, principals, and professors of education. The realization of the need is well expressed by Dr. Hollister in a letter to the high-school principals and teachers of Illinois:

"It is very desirable that, before we consider the time and place to be given to various subjects and activities in the school curriculum, we should determine clearly what our objectives are to be. By this means only shall we obtain any reliable basis for weighing the various subjects as determined by the relative importance of each in attaining such objectives."

In most discussions of the objectives, certain shortcomings are painfully evident. To mention one, the objectives are usually too general for the guidance of actual procedure. For example, the National Education Association Commission recommends the

⁵ David Snedden, "New Problems of Secondary Education," *American Education*, February, 1916, pp. 332-336.

following seven: (1) health, (2) command of fundamental processes, (3) worthy home membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, (7) ethical character.

This is a genuine contribution; but it can have little value in the guidance of practical labors until these general terms are broken up into their specifics. To aim at health, for example, in a vague, general way is scarcely to aim at all. We need an itemized statement of the specific habits which condition good health and which, therefore, are to be developed in men and women during their formative years; an itemized statement of the attitudes and valuations which lie back of and support these habits; equally specific statement of the definite powers of judgment to be developed; statement of the bodies of information needed for guidance, control, and the intellectual support of habits, valuations, etc.; statement of aspects of physical development in which the individual's pride should be awakened; and a number of other things.

Let us illustrate by presenting a sample list of specific health abilities at which education might aim:

1. Ability to make one's food contribute in maximum measure to one's physical well-being.
2. Ability to keep the body mechanism properly oxygenated.
3. Ability to utilize muscular exercise as a life-long means of developing and maintaining a high level of physical vitality.
4. Ability and disposition throughout life to engage with pleasure and profit in a varied repertory of games, sports, athletics, dances, outdoor recreations, etc., such as swimming, skating, hiking, rowing, riding, tennis, golf, ball games of various kinds, running games, fencing, folk dancing, fishing, hunting, canoeing, motoring, camping, athletic events, etc.
5. Ability to engage in a variety of unspecialized productive labors which contribute diverse and needed elements to one's repertory of physical experiences.
6. Ability to make one's various mental and emotional states and activities contribute in maximum degree to one's physical well-being.
7. Ability to make one's sleep contribute in maximum measure to the development and maintenance of a high level of physical vitality.
8. Ability to protect one's self from micro-organisms; and to deal with them and their products effectively in case of attack.

9. Ability rightly to control the factors involved in the maintenance of bodily temperatures.

10. Ability to dress in ways that promote the physical well-being in maximum degree.

11. Ability to maintain bodily cleanliness, external and internal.

12. Ability to provide the most favorable conditions for the elimination from the tissues, organs, and body in general of all harmful or needless substances and agents.

13. Ability to control one's relations to sunlight so as to secure maximum benefits therefrom.

14. Ability to maintain postures conducive to the best physical functioning.

15. Ability to secure that variety or diversity of physical experiences necessary for maximum well-being.

16. Ability to maintain that proper balance between excessive regularity and excessive irregularity which is necessary for maximum physical well-being.

17. Ability properly to utilize painful experiences as elements in one's repertory of necessary physical experiences.

18. Ability to work *hard* for long periods and still keep physically fit.

19. Ability to draw up an individual program of work, play, rest, sleep, meals, etc., best suited to one's physical nature and capacity; and currently to keep that program of work adapted to the ever-changing conditions of one's situation.

20. Ability to protect one's self from preventable accidents.

21. Ability to deal with conditions produced by many kinds of common accidents.

22. Ability to protect from dust, smoke, noxious gases, etc.

23. Ability to care for the eyes.

24. Ability to care for the teeth.

25. Ability to care for nose, ears, and throat.

26. Ability to avoid or to prevent the conditions which bring on or sustain colds.

27. Ability to keep the heart and blood vessels in normal working condition.

28. Ability to care for the skin.

29. Ability to care for the hair and scalp.

30. Ability to care for the nails.

31. Ability to care properly for the feet.

32. Ability to control sex functions in the interests of high physical vitality.

33. Ability to keep reasonably well-informed, in the degree to be expected of a layman, as to the progress and discoveries of science in the fields of health conservation and promotion.

34. Ability to recognize the symptoms of many kinds of ailments in their incipient stages.

35. Ability to take the protective, precautionary, or remedial steps necessary to protect one's self or family from a considerable number of common ailments.

36. Ability within one's occupational field to co-operate effectively in providing wholesome working conditions.

37. Ability wisely to utilize the services of a specialist in health and physical upbuilding and maintenance.

38. Ability to perform one's civic functions in co-operating with and in the social support and control of all public agencies engaged in promoting the general physical welfare.

If the educational objective agreed upon by the profession is simply the general matter of health, it is possible for the curriculum-maker to miss a considerable or even a large portion of the field without even knowing it. If, however, we have a full and detailed list of the abilities required, then the curriculum-maker is guided in the formulation of a complete and well-proportioned program. The foregoing list will probably not require many additions to be relatively complete. It was formulated from the suggestions of several hundred experienced professional workers. It is the judgment of the writer that our profession should draw up co-operatively as early as practicable an authoritative list to be used for guidance in curriculum-making.

An ability is a complex or composite thing. Each of the foregoing objectives can be broken up into further specifics. Each one of them requires certain habits, valuations, attitudes, interests, tendencies, desires, items or bodies of information, powers of judgment, impelling faiths, social sensitiveness and responsiveness, pride of physique, etc. We are not ready really to formulate the curriculum until we have taken each several ability and thus broken it up into its specifics and laid them out before us for our guidance in formulating pupil-experiences. Education will not aim at the development of the abilities in a merely general way. It must aim definitely and accurately at the development of each of the specific ingredients which make up the abilities. Let

us illustrate by presenting a series of the specifics involved in the first of the list given above. The limitations of space preclude any attempt to present here a complete series.

Ability to make one's food contribute to one's maximum well-being. 1. Habit of selecting a balanced dietary adapted to one's nature, size, age, character of work, the season of the year, etc.

2. Good *judgment* in making adaptations of one's dietary to meet ever-changing conditions.

3. Impelling and effective *desire* to make one's food contribute in maximum degree to one's well-being.

4. Impelling *desire* for that level of physical energy which can be had only through obedience to the dictates of dietetic science.

5. Effective *desire* for the things which one can usually have only when one maintains a high level of vitality.

6. *Willingness* to forego dietetic pleasures of the moment for the sake of maintaining physical efficiency.

7. *Willingness* in the care of one's dietary to take trouble, and when necessary to endure pain and privation, for the sake of maintaining physical efficiency.

8. Automatic *habit* of refraining from foods known to be unwholesome, however attractive or tempting they may be.

9. *Habit* of self-control in the matter of one's appetite.

10. An effective *interest* in dietetic science and the physiology of nutrition.

11. A good *knowledge* of the chemical composition of foods.

12. A *knowledge* of the physiological values of foods of different kinds.

13. *Knowledge* of variations in amount and character of food needed according to the age of the individual, his size, character of his work, the seasonal temperatures, etc.

14. *Knowledge* of kinds of food contaminations to be avoided.

15. A *habit* of noting the sanitary characteristics of one's food supply.

16. *Habit* of avoiding all foods of questionable sanitary character.

17. A *disposition* to obey the dictates of physiological and dietetic laws.

18. An enduring *faith* in the efficacy of the dictates of dietetic science.

19. A detailed *understanding* of the relation of one's food supply to one's vocational efficiency.

20. A *habit* of choosing one's diet with a sufficient view to one's vocational efficiency.

21. A detailed *understanding* of the relation of one's dietary to one's ability to enjoy and to profit from one's leisure occupations.

22. A detailed *understanding* of the relation of one's food supply to mental clarity and general mental efficiency.

23. A full *understanding* of the relation of one's food supply to general social efficiency, civic efficiency, etc.

24. A full *appreciation* of the degree to which one's general efficiency is dependent upon right food habits consistently maintained.

25. A *habit* of considering the effects upon one's general physical efficiency as one currently selects one's food.

26. Such a *valuation* of and *desire* to perform with pleasure and profit the entire round of desirable human activities that one is impelled to obey the dictates of hygienic science.

27. A full *knowledge* of the relation of muscular activity to normality of digestion and assimilation.

28. *Knowledge* of the ways in which digestion can be interfered with and deranged through excessive activities during or immediately after meals.

29. *Habit* of avoiding excessive nervous or muscular activity during or immediately following meals.

30. *Habit* of mental and physiological serenity at the time of and immediately after one's meals.

31. *Consistency* in holding to regular times for eating; avoidance of irregular eating between meals.

32. *Habit* of eating with sufficient slowness.

33. *Knowledge* or values of thorough mastication of one's food.

34. *Habit* of thorough mastication of one's food.

35. *Knowledge* of the relation of surrounding temperatures to normality of digestion and assimilation.

36. *Knowledge* of the kinds of harm that may result from improper balance in the ration.

37. *Knowledge* of the kinds of harm that result from insufficient food.

38. *Knowledge* of the kinds of harm that result from excess food.

39. *Knowledge* of the symptoms of improper functioning in any portion of the alimentary tract.

40. *Skill* in detecting the symptoms of improper functioning.

41. *Knowledge* of the measures to be taken when symptoms indicate improper functioning in any portion of the alimentary tract.

42. *Skill* in judging, planning, and promptly taking proper action in cases of improper alimentary functioning.

43. *Knowledge* of the physiological conditions best for moving the food normally through the alimentary tract.

44. Specially full *knowledge* in one's individual case of the specific food ingredients, etc., which are specially helpful in producing normally rapid and complete movement of food residues through the alimentary tract.

45. A full *knowledge* of the specific conditions, influences, ingredients, etc., which tend in one's particular case to produce sluggishness of movement through the alimentary tract.

46. *Knowledge* of the ways in detail in which the form of dress may interfere with alimentary functions.

47. Consistent *habit* of dressing so as to avoid interference with alimentary processes.

48. Such *confidence* in one's ability to choose his dietary that it is done, and satisfactorily done, without that introspective concern which may easily become excessive and morbid.

Many other items should be added to the list before it is even reasonably complete. Enough are here given to illustrate the professional task which lies before us. It seems that not only should we co-operatively formulate a full and authoritative series of abilities to be developed, but we should likewise co-operatively formulate for each one of them a reasonably complete and authoritative series of the specific ingredients to be aimed at. With such lists before the curriculum-maker in any specific situation, he has full and secure guidance.

Such a list is imperative because of professional prejudices and predilections relative to the so-called content of education. Theoretically, we value much besides *information*; but practically, leaving aside fundamental processes and certain language abilities, emphasis everywhere is upon information and informational technique. The foregoing list shows information to be a necessary component of the educational structure; but equally evident are habits, attitudes, valuations, desires, interests, tendencies to action, sense of responsibility, etc. In spite of what we say relative to the values of these latter things, we do not actually aim at them with the precision and persistence that we employ in the case of

information. For most of them we have no properly developed and actually operative technique. We are not likely to have such until we have more fully clarified our ideas relative to objectives of non-informational type. When we realize that they are as important as information, then we shall develop the necessary technique of training.

Let our profession co-operatively develop these general and detailed lists of objectives of physical efficiency, and we shall have performed the first task in the development of scientific education in this field. As a matter of fact, we are not prepared rationally to perform the other tasks involved in physical education until this has been done. It is the objectives and the objectives alone, as conditioned by child-nature and opportunity, which dictate the pupil-experiences which make up the curriculum. It is then these in their turn which dictate the specific methods to be employed by the teachers and specific material helps and appliances and opportunities to be provided. These in their turn dictate the supervision, the nature of the supervisory organization, the quantity of finance, and the various other functions involved in attaining the desired results. And finally, it is the specific objectives which provided standards to be employed in the measurement of results. We are trying to introduce scientific methods into every aspect of the field; but, quite clearly, the interrelationships of these factors are such that we can never develop scientific procedure throughout the field until we have laid a secure foundation in the careful determination of the objectives. The later educational procedure cannot be regarded as very scientific if it must all be based upon initial vague and fragmentary guesses as to the objectives.

The first step of scientific procedure is predetermination of the outcomes.

To avoid misapprehension, we must say that there can be no series of physical education objectives applicable equally everywhere and to all individuals which can be the basis of universally uniform courses of training in the field. The objectives actually aimed at within any school system must differ from region to region according to the specific needs of the population; they must differ from individual to individual according to the specific nature and needs of the beneficiary; they must differ according to the teaching, supervisory, and material resources of the community; they must differ in some measure according to the social

character and attitudes of the laymen in different communities; they must differ according to the degree of parental and community co-operation which can be secured; and for other reasons.

There is probably little or no danger in the co-operative task here recommended resulting in the uniformization and mechanization of the physical-training program. It is when we are aiming in vague and general ways that it appears possible to have a uniform program. When we reduce our objectives to specifics and look at the children from the point of view of those specifics, then not only the undesirability but the impossibility of holding to uniform programs of training becomes clearly evident.

The absurdity of our uniform courses of training has long been theoretically evident; but practically our technique of curriculum-making has tended to encourage and retain this vicious uniformity in our courses of training. Before we can eliminate the evil, we must change our technique of curriculum-making and find methods which encourage the exact adaptation of the curriculum to the needs of individuals, classes, and regions. The particularization of our objectives is undoubtedly one major feature of such individualizing technique.

ACTIVITY ANALYSIS AND CURRICULUM CONSTRUCTION*

BY W. W. CHARTERS

There are two clear-cut theories concerning the relation of the curriculum to the activities of the individual. The theory upon which current curricula have usually been constructed maintains that the content of the curriculum should come from the specialist and be applied by the individual to the activities in which he engages after he has learned them. The specialist in chemistry, for instance, constructs a course in that subject which presents the fundamental facts and principles of the science as the chemist uses them. The same material is taught to chemists, engineers, farmers, doctors, housekeepers, and laymen, with the expectation that each will apply such of it as he may need, to the activities of his vocation or his leisure. The lexicographer selects the spelling list for the school and thereby specifies what he considers to be the fundamental spelling vocabulary. This list the individual learns and of it he uses those words which he may need in writing letters, articles, speeches, or reports. To these illustrations

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may be added the curricula in history, botany, zoology, physics, design, mathematics, grammar, sociology, and others. In all of them the theory of specialistic determination holds that the fundamental content of the subject taught in the school is determined by the specialist; and that the learner, after acquisition, uses what he needs.

The other theory, which is the natural outgrowth of the theory of evolution, maintains that the content of a school subject is determined by the use to which it will be put. It quite willingly grants that the chemist shall determine the content of chemistry courses for prospective chemists but it emphatically maintains that the same right shall be granted for the use of the engineer, the doctor, the housekeeper, the farmer, and the layman.

The theory of evolution holds that a structure which functions successfully in one situation may be beneficially modified when placed in another situation. The supporters of the theory of activity analysis, to apply the parallel with evolution, hold that the situation of the specialist as described in terms of his activities, duties, and problems, is not identical with that of the engineer, the doctor, or the layman whose problems and duties are different and that, therefore, the structure of the curriculum may well be modified more successfully to cope with the differences of each.

But the method of activity analysis advances beyond the law of natural selection which operates rather blindly in the field of biological life in preserving useful accidental variations. A biological organism changes its structure through accidental variation so that when it comes into possession of characteristics which are of superior efficiency in controlling a type of situation in which it is placed, it tends to retain the useful modifications thus more or less accidentally thrust upon it. Rational beings, however, in developing social organisms, such as the curriculum is, can advance a step beyond the law of natural selection by first making an analysis of the situation to which adjustment is to be made and then developing an organism which meets these conditions in a superior way.

This is primarily what activity analysis attempts to do in the field of curriculum construction. The activities in connection with which a subject may be used are analyzed to discover exactly what the individual is to do and then the subject material necessary to assist in the performance of these activities is collected and organized. For instance, one situation in which the learner

finds himself is concerned with the communicating and recording of facts. Specifically, the layman writes letters, and children compose original themes. To analyze this situation a count is made of words—in personal letters and in the writing of children. The lists so obtained become the spelling vocabulary for the elementary school, which is the school for laymen. For the spelling curriculum of the business college in which stenographers and typists are trained, the same method is used but applied to a different situation in which word counts of business letters are made. Arithmetic for the layman may be determined by a collection of arithmetical problems which the layman meets. Mathematics for chemists is determined by an investigation of the mathematics used by chemists. The chemistry used in food courses is obtained by derivation from the content of food courses. The grammar necessary for the correction of errors is secured after an analysis of grammatical errors of school children. The English composition needed by engineers is disclosed by an analysis of the uses to which engineers put the subject. The sociology needed by the layman is obtained by an examination of the social problems which confront the layman, just as the sociology needed by the sociologist is determined by the problems encountered in the field of sociology.

In all cases the theory of activity analysis holds that the structure of a subject varies with its function and its content with its use. It leaves a place for the specialists' organization of the curriculum by allowing that the function of the subject for him is one of many functions while it opposes the claim that the structure which is best for the conditions of the specialist meets all other situations equally well.

The method of activity analysis is profoundly significant and is so incompletely understood that the writer has taken the liberty of presenting some of the problems which have to be met in its use. For clarity these will be listed and described as *dichotomous* situations in which the selection of one or another of pairs of considerations modify methods of analysis and of curriculum construction.

Parenthetically, it may be said that an activity analysis is the analysis of both the mental and physical activities which are carried on by individuals. Used in this broad sense, activities include not only what people do but what they think, and feel, or will. In its most complicated form, the analysis is concerned

with a broad range of physical actions, feelings, and purposes, as in the analysis of the activities of women made for the purpose of constructing a college curriculum for women. In its simpler forms, it involves the analysis of definite operations, to which the term job analysis is applied, as in the analysis of the operations involved in running a machine. Between these two extremes are activities displaying all gradations of complexity and requiring all degrees of analytical ability.

The first dichotomous situation which causes a modification of methods is contained in the distinction between sequential and non-sequential activities. By a sequential operation is meant one in which the constituent activities normally follow each other in regular order. Most personal routine duties are of this sort, such as dressing in the morning and baking a cake, or as in machinery operations in production plants and annual calendars of animal husbandry. Non-sequential activities, on the contrary, are arranged in no regular order in the performance of any operation. Specifically, communication of ideals through spelling, writing, and language is non-sequential because there is no regular order observed in the occurrence of words or rules of syntax since their use is dependent upon the demands of varying situations. A job analysis of salesmanship, in which all the activities or duties are to be listed, is much more difficult than the job analysis of cabinet making. A job analysis of home making deals with duties some of which are routine and sequential but most of which are irregular and non-sequential in their appearance.

This leads to very marked differences in methods of analysis. For sequential jobs, the usual procedure followed by the job analyst is to obtain from each of several operators in separate interviews a list of his duties, to combine these, to resubmit the list to them, and to have it checked by the foreman. In non-sequential jobs the same procedure is used as a basis but from knowledge born of experience, the analyst finds that he needs to make a supplementary analysis by long continued personal observation of the operations and in some cases by a long continued performance of the job. A case in point is that of the analysis of salesmanship which was made by us last year. Interviews were held with many salespeople for the purpose of obtaining a list of their difficulties; to this were added interviews with several managers and superintendents; but so little was obtained from these sources that a member of our staff with competent experience in

selling, had to be detailed to watch salespeople at work daily for three months before we felt that we had a reasonably accurate list of the duties of retail selling. In other words, the analysis of non-sequential jobs is much more difficult than that of sequential activities and requires a more elaborate technique.

A second bifurcation of methods is necessary according as the analyst wishes to make an activity analysis or a difficulty analysis. For instance, a spelling vocabulary based upon analysis may list either the words most frequently used in correspondence or those most frequently misspelled. In the former case the top words are such as: *in, all, and, as, and for*. While in the latter the words which lead the list are: *separate, which, there, and their*.

While theoretically every learned activity at some time or another is a difficulty, with the result that eventually the two lists are identical, there are practical situations in which the activity analysis is not as efficient as the difficulty analysis. For in the first place, operators are often unable to report what they do because many of their duties have become submerged habits, while they may easily be able to recognize the duties with which they have difficulty because difficulties require the focusing of attention. In the second place, if the analysis is made after activities have been partially learned it is extremely important to know those with which the learner now has difficulty in order that special attention may be given to them. So, in the study of language in the school, to which children come with some proficiency in speech, it is less important to know the rules they use than the rules they break. For practical purposes, in this case, it is unnecessary to teach them rules which they cannot break while obviously it is of first importance to teach them rules whose observance will eliminate error. When the operations have been carried along to a position of partial mastery, difficulty analysis becomes a necessary method in the construction of a training curriculum.

This is the fundamental position of Bobbitt in his theory of curriculum construction, though it can be demonstrated in opposition to this position that it will hold only where activities have been partially learned and is, therefore, not of sufficient breadth to determine all the activities which should be included in a school curriculum. These can be determined only by an activity analysis, to which a difficulty analysis is a necessary supplement in the later stages of learning.

A third distinction of sufficient importance to be mentioned

is that between what may be called gross analysis and detailed analysis. If the analysis is made sufficiently minute it is possible so objectively to determine the content of the curriculum that the work can be performed in the laboratory; but if the analysis ceases before working units are obtained, it becomes necessary to supplement the findings of the analyst by conference with faculty committees. For instance, a study of the mathematics used in chemistry by Williams is carried to sufficient detail for not only the operations but their range of complexity to be determined with such exactness that a review course may be worked out in detail. At no point in the study is any item a matter of opinion. So, also, the spelling lists obtained by word counts are sufficiently detailed to establish objectively the actual content of the spelling curriculum. On the other hand, the job analysis made by Strong of the duties of executives, as the basis for a curriculum in commercial engineering, was so complicated and the pressure of time so great that only the broad outlines of the content of the derived courses could be determined, with the result that for the completion of the work committees of teachers of all subjects concerned become a necessary part of the method.

Gross analysis, then, is not so objective as detailed analysis, and requires the use of consensus and conference while a detailed analysis makes opinion an unnecessary part of the methods of curriculum construction. The goal of all curriculum construction is the elimination of as much of the subjective element as possible, though this cannot be entirely accomplished.

A fourth distinction in the use of activity analysis arises from divergent uses of the analysis. The employment departments of commercial and industrial organizations make analyses to obtain job specifications while the training departments use them for curriculum content. For job specification, it is necessary to list only what is to be done by an operator in a specific position so that when the employment office is called upon to select a person for the position he will know the nature of the job. For curriculum construction, it is necessary to supplement this information about what is to be done with additional information as to how the operations are to be performed. For these reasons the job specification is much less detailed, and as a matter of fact it is usually found that the curriculum cannot be based upon the employment department's job specifications. New

analyses have to be made by the training department with much greater attention to the details of the operations. Theoretically, the job specification is the proper basis for the training program; but because of these differences in function those job specifications found in employment offices will not usually suffice.

This leads naturally to a fifth distinction which may be stated in the form of a question. Shall training departments teach the installed methods of job performance or the best methods? The obvious alternative is the latter, but practical considerations may cause a change of opinion. For instance, if in the training of operatives in the correspondence division of a large department store the management asks the training department to make a change in the system as well, it is in effect asking it not only to teach but to reorganize. So, because of the expense and time involved, it may be advisable for the training department to teach the imperfect installed procedure rather than to effect a more efficient procedure before the training program is begun. Yet, it may be said parenthetically, that in business the tendency is toward placing both training and organization on the shoulders of the training department, especially when a radical reorganization is not required.

Nor are the schools free from this problem. Superficially, it seems self-evident that only the best methods of performing activities should be taught in the school. But in practice it is often a question whether this is wise. Is it advisable, for example, to advocate the best methods of solving social and political problems (the best being determined by the judgment of conscientious teachers) if it is not practically possible to make the necessary reorganization of social institutions which will permit the most efficient methods to be used? In these difficult cases the wise teacher modifies his best in such a way as to make it the best possible under existing conditions and teaches his students the methods by which reorganization of social institutions may be effected. But in either case the curriculum is affected by the point of view which is chosen.

The sixth consideration is the distinction between ideals and activities. An activity analysis is not sufficient to determine the curriculum unless standards of performance are set up by which to make a selection of methods. This is done by the determination of ideals, which dominate the performance of the activities. This is recognized informally in the selection of

men in business by the inclusion in the job specification of both the duties to be performed and the personal qualities desired. Some positions require courtesy, others demand scholarliness, and all require honesty and conscientiousness. So in building a curriculum it is necessary to determine both activities and ideals. For instance, a secretary may have the duties of answering the telephone and of meeting callers. These may be done in several ways but obviously the ideal of courtesy is so important that only courteous methods of answering the telephone and of meeting callers will be selected.. Merely to perform these duties, or to perform them with wrong ideals, will not lead to efficiency.

Consequently in school as in business the determination of standards in the guise of ideals is an essential part of all curriculum construction. So important is this procedure that faculties should conscientiously and reflectively determine the ideals whose stamp their graduates shall bear and then apply the appropriate ideals as standards for the selection of alternative methods of performance. Long and laborious as this procedure is, it is the only method by which the curriculum can be built or can be acquired. In all curriculum construction, the ideals must be determined before the methods for performing the activities obtained by analysis can be selected.

Of a somewhat different sort is the seventh bifurcation. This lies in the distinction between primary subjects and derived subjects. To clarify this distinction an illustration may be given. When in the major job analysis made by Strong the duties of the executives of certain industrial organizations had been ascertained and the information necessary to perform them had been listed, there was found to be a large amount of English, of psychology, and of economics, but only a very short list of the principles of physics. So far as the primary subjects, that is those discovered in the analysis, were concerned physics was judged to be relatively unimportant; but this did not mean that no other items of physics were necessary. For, when the primary subjects, such as mechanics, were examined, it was found that physical laws were necessary for their mastery. So, to obtain a full curriculum in physics it was necessary to list all the items of physics revealed in the primary analysis and to derive from the other subjects the additional items of physics necessary to understand them.

This means that the so-called fundamental service subjects

of mathematics, chemistry, physics, sociology, or history are essentially derived subjects rather than primary subjects revealed in the analysis. It may be said in passing that this explains in part the statement of professional men that they do not use their fundamental subjects and explodes the claim sometimes made that because they do not use them, they should not learn them. For, obviously, at one time it was necessary for them to learn the fundamental subjects in order to understand methods which they now use; and it is legitimate to forget items once the basic use for them has ceased. However, this does not mean that the method of specialistic determination is to be followed. It is still necessary for the fundamental service subjects to be derived by activity analysis so as to include only what must be understood; but it is not a matter for alarm if later they are forgotten after use for them has disappeared.

Finally, a distinction needs to be made between the vocational elements and the extra-vocational elements in the curriculum of the vocational school. The vocational portions of the curriculum can be obtained by the analysis of vocational activities and the material may be collected under the domination of selected ideals. But just as the doctor or the engineer is something more than a mere doctor or engineer because he has extra-vocational responsibilities and interest in his family, his friends, and his civic problems, so the curriculum of the vocational school must include more subject material than is obtained from a job analysis of the vocation.

Two analyses are necessary, a vocational analysis and an extra-vocational analysis. The activities and interests of extra-vocational life, those problems and interests which all men have, irrespective of vocation, must be analyzed by the same methods as are used in the vocational analysis.

At present the extra-vocational content is determined negatively. A few hours are set aside in the course of study for so-called cultural subjects and the selection of courses to fill them is largely left to chance. What we advocate is a positive approach to the question through an activity analysis of extra-vocational life from which can be definitely determined what will be of most use for the individual in furthering those interests and needs which are not directly connected with the vocation.

Other considerations might be presented to illustrate the problems of curriculum construction but enough have been men-

tioned to show the possibilities and the difficulties of activity analysis.

In conclusion, the foregoing considerations demand that when activities are analyzed, ideals and standards must be set up to aid in the selection of subject material; that in analyzing activities, difficulty analyses may supplement activity analyses; and that in all cases the analysis should be as detailed as possible in order to secure the largest measure of scientific objectivity. Non-sequential jobs are difficult of analysis but the task is neither impossible nor impractical. The content of subjects may be of direct use in activities or may be derived from subjects which are of direct use, as the basis upon which they rest. Finally all courses of study in vocational schools must include not only vocational but also extra-vocational content, both obtained by the analysis of activities—the former by an analysis of the vocation and the latter by an analysis of extra-vocational life.

EDUCATIONAL OBJECTIVES AS A BASIS FOR CURRICULUM-MAKING⁷

Education aims to produce results. These results are human abilities, habits, attitudes, appreciations, skills, powers of judgment, personal characteristics of various kinds, etc. The first practical task of curriculum-making is to draw up for working purposes a list of the several kinds of specific abilities and other human characteristics which are to be the results of education. Every item in a curriculum is but a means to an end; it is necessary first, therefore, to know what these various ends are.

Education has always aimed at objectives. These have usually been memories well stocked with examinable textbook information, and ability to deal with conventional textbook materials in well-known classroom ways. The academic objectives have rarely been the abilities which should currently function in everyday life. Rarely has education looked to the life of the community by way of discovering its specific objectives.

The Los Angeles labors assumed that textbook information is a *means*, not an *end*; that it is not a thing merely to be memorized without looking beyond; but that it must look forward to abilities

⁷ Adapted from Franklin Bobbitt *Curriculum-Making in Los Angeles*. The University of Chicago, 1922. Pp. 4-7 and 45-47.

and personal qualities actually needed by the men and women of the city.

We, therefore, first undertook the task of drawing up a comprehensive list of human abilities and characteristics which appear to be generally needed by the citizens of Los Angeles. It was not supposed that the schools would systematically attempt to develop each of the many characteristics and abilities. It was obvious that many of them are of such a simple nature that they can be developed by observing and participating in the general community life. The presumption, however, was that if we had a complete series of the generally needed abilities and characteristics, from this comprehensive list we could select those which were so complex and difficult as to require the labors of the educational profession. This portion of the total list would comprise the objectives of education. The mode of procedure in preparing a list of objectives was as follows:

1. The writer placed before the organization a suggestive list of abilities and characteristics which had been drawn up co-operatively in his classes of graduate students in the University of Chicago, numbering several hundred in the aggregate, most of whom were high-school teachers, elementary- and high-school principals and supervisors, superintendents, and normal-school and college instructors. This list of abilities was, therefore, a carefully winnowed and organized list which had resulted from several years of actual labors. It would have required the teachers in Los Angeles a long time to work out from the beginning so finished a list.

While we refer to it as being relatively finished, as a matter of fact it must be remembered that it represented but the empirical judgments of several hundred professional men and women; it did not represent the fruits of any scientific studies in the field of education. It is a pioneer formulation which is yet upon the level of hypothesis. For the reason just given, there was no thought of imposing this list upon the Los Angeles situation as a thing prescribed. There was also the further reason that in many respects the city of Los Angeles is differently situated and has different problems from those of the Mississippi Valley from which most of the graduate workers had come who were concerned in formulating this original list.

For the teachers in Los Angeles, therefore, the list was intended to be an *illustration* of the kind of thing they needed; to show

the kind of details of which such a list should be made up; to save labor on their part by suggesting a large number of things which it was obvious they would themselves suggest.

2. The second step was for the twelve hundred high-school teachers in Los Angeles to formulate a list of the human abilities and characteristics which in their judgment were advisable or desirable for the men and women of that city—irrespective of whether the schools were to adopt them as their objectives or not. The method of accomplishing this task is indicated by the following questions which relate to the long series of abilities and characteristics which was at that time placed in their hands. *To citizens, school officials, and teachers of Los Angeles:*

1. Which of the following human characteristics and abilities appear to be generally *desirable*, and therefore legitimate objectives of education?

2. Which ones are frequently, but not generally, desirable?

3. Which ones are probably undesirable, and therefore not legitimate objectives of education?

4. Which ones are at least questionable?

5. Which ones should be amended in statement? What amendment would you suggest?

6. *What additional abilities and characteristics, not here suggested, are also desirable, which should be added to the lists by way of completing them?* It is for completing an acceptable series of lists that we are particularly anxious to receive suggestions.

7. Which of the following statements of ability are not clear in meaning?

In replying to any of these questions, except the sixth, the abilities can be referred to by *number*.

The questions were designed to discover the abilities already assembled which the majority could approve for the entire population; those which they could approve for a portion of the population; those which they would cast out as undesirable or illegitimate; those which should be carefully studied because of their questionable nature; those which should be amended in content or mode of statement; and finally, they were asked to suggest any ability or characteristic desirable in the men and women of the city which was not included in the list. This gave them for formulating the desirable abilities and characteristics a plan which provided absolute freedom to formulate whatever

list they would, and to do it with the greatest possible economy of labor.

The original list of abilities and characteristics exactly as sent out to the schools is not here reproduced. Instead, we present in this chapter the slightly revised and extended list which resulted from our several labors. Practically all of the items of the original list were approved. A few were eliminated because of duplication. In a few cases two or three were combined into a single one for the sake of simplicity of statement. The list was found already so complete that relatively few additional ones were suggested and most of these were really already included by implication in the list. About twenty additions were made.

It might be urged that the list of abilities and other personal qualities should result from a careful scientific analysis of community needs by trained investigators. Doubtless this is the case. But where are the trained investigators who possess the technique, and who are otherwise prepared to do the work? They do not yet exist. Of course, there is any number of persons who could take the lists of abilities here presented, or others similarly drawn, and go to the society and gather facts by way of proving them. We should discover what we already know. Take, for example, the ability to read. So far as the writer is aware, there has never been any scientific investigation which proves that this is a needed ability. When the proofs are about us on every hand, so convincing and so incontestable, it is a work of supererogation to take the trouble to prove it. Of course we could send out scientific investigators to assemble the proofs. But it is needless. The common judgment of men, where opinion is so undivided, is a sufficient basis for practical action until the contrary is proved.

In the same way, most of the *fundamental* abilities included in our lists—we do not here refer to the minor ones—represent the common judgment of thoughtful men and women. Science is needed in some cases for making them quantitatively exact; but not often for proving their need.

There is another reason for not awaiting the results of scientific research. The schools are *now* in operation. The objectives are needed at once. Every subsequent step in curriculum-making is dependent upon them. The best practicable method that will provide them immediately should be employed. The practical man values science for guidance; but where it does

not exist, he must get on with the best substitute available. In the absence of science, the best hypothesis that can be formulated provides the safest guidance.

The abilities and characteristics. Man's activities lie in many fields. Different modes of classification are possible. It seems best, however, to employ as nearly as practicable, the common classifications of everyday life. It is believed that the following ten classes cover the field:

- I. Social intercommunication, mainly language
- II. The Development and Maintenance of One's Physical Powers
- III. Unspecialized Practical Labors
- IV. The Labors of One's Calling
- V. The Activities of the Efficient Citizen
- VI. Activities Involved in One's General Social Relationships and Behavior
- VII. Leisure Occupations, Recreations, Amusements
- VIII. Development and Maintenance of One's Mental Efficiency
- IX. Religious Activities
- X. Parental Activities, the Upbringing of Children, the Maintenance of the Home Life.

There are probably few desirable human activities which will not fall within one or another of these several categories. The activities then point to ten classes of abilities which men need. Under these ten headings, therefore, we have grouped the abilities and characteristics sanctioned by the teachers of Los Angeles as desirable for the men and women of the city. It must be noted, however, that in some cases the abilities are considered desirable for the entire population; in other cases they are considered desirable for only a portion of the population. Some of the things are needed by certain social or ability classes and not by other classes. Some of the things are appropriate for men, and some of the things for women, although the great majority of them are desirable for both. Ultimately it will be desirable to draw up a separate list for each of these population groups. For the immediate labors this general list sufficiently serves the purpose.

The teachers of literature went through the comprehensive series of abilities and selected those which should be kept in view as the goals of the work in literature and general reading.

After they had thus pointed out the abilities to be aimed at, a statement of literature objectives which involved the more fundamental ones chosen was drawn up and submitted to the teachers for their consideration. The following list includes the fundamental objectives as they were chosen.

1. The ability, disposition, and habit of abundant and greatly diversified *reading* as a means of enjoyable and fruitful indirect observation of men, things and affairs, and of vicarious participation in those affairs.

2. The ability through reading to enter into and participate in the varied, but especially the serious, thought-life of the world.

3. A proportioned intellectual apprehension, such as one's native capacity will permit, of men, things, and affairs; together with the necessary normal interests, emotional accompaniments, etc. Specifically, such as the following:

(a) The nature of man, types of men, social classes, etc.

(b) Human institutions.

(c) Manners and customs.

(d) Special human groups and their specialized situations, activities, duties, problems, etc. (This includes occupation groups.)

(e) The genesis of man and his institutions, customs, arts, etc.

(f) Man's creations of myth, legend, and folklore.

(g) The world of technology.

(h) The world of fine arts.

(i) Man's physical and geographical habitat: (1) The world of plant life; (2) world of animal life; (3) world of chemical phenomena; (4) world of physical phenomena; (5) the geological world; (6) the astronomical world.

4. A mind enriched with the world's great literature.

5. A "human race," "brotherhood of man," "large-group" social consciousness. Sympathetic and intelligent social attitudes and reactions—to things local, state, national, and international.

6. Language abilities which in part result normally from abundant and diversified *reading*:

(a) Ability to read with proper ease, speed, and comprehension.

(b) Ability to spell the words of one's writing vocabulary.

(c) Command over an adequate reading, speaking, and writing vocabulary.

- (d) Ability to use English which is grammatically correct.
- (e) Ability to organize and express one's thoughts effectively.
- (f) The ability to get the essential thought of books or articles quickly with a minimum amount of reading.
- (g) Ability to read a foreign language.
- (h) A proper character and degree of language-mindedness.
- (i) Amateur ability to do literary production of different kinds.

This tentative list may be modified. The foregoing objectives, however, were accepted with such unanimity that it is improbable that any of them in substance will be rejected. Further changes are likely to be in the mode of a statement; and by adding others to the list.

With the foregoing objectives before them the next task of the teachers was to formulate a statement of pupil activities and experiences necessary for achieving each of them. For Objective I, for example, they were to draw up a list of which the following is only a beginning.

Literature Objective I. 1. The pupil will read literature several hours each week in ways and under conditions as normal as possible.

2. He will read books, stories, articles, etc., appropriate to his level of maturity and degree of achievement.

3. He will himself, with the advice of, and within the limits set by his teachers, choose the books that he will read.

4. He will read literature that reveals life and institutions in the different countries of the earth.

5. He will read literature which reveals human life and affairs at different periods in the world's history.

6. He will do most of his reading at home. (Except where home-life is abnormal.)

7. He will often talk over his reading with his associates, both juvenile and adult.

8. In most of his reading, he will read silently; and as far as conditions permit, rapidly.

9. He will . . .

10. He will . . .

11. Etc.⁸

It is indispensable that education be stated in terms of *what*

⁸ Professor Bobbitt's *How to Make a Curriculum* should be consulted at this point. Houghton Mifflin Company, 1924.

the pupil does or experiences. For this reason it was suggested that, as shown in the example, each of the pupil activities and experiences begins with the words, "The pupil will. . . ."

After having decided upon the objectives, it was found necessary to agree upon certain basal assumptions which could be used for the guidance of committees of teachers in considering the pupil activities and experiences required for achieving the several objectives. The thing really needed is a set of basic general principles; but owing to the embryonic character of educational science in this field, it is not possible at present to have anything which can be dignified by the name of principles. The only thing possible at present is to set up certain general assumptions, which are admittedly tentative, but which can serve until something better can be provided. In large measure, they are but hypotheses. But nine-tenths and more of the practical work of education proceeds on the basis of hypothesis. The *science* of education is to be derived in time through the testing out of these hypotheses.

Principles for deriving the objectives of secondary education. The objectives of education must be stated with reference to, if not in terms of, pupils' nature, abilities, and interests, and with reference to sound principles of teaching. What pupils are to learn is not, however, fully revealed by their own narrow and immediate interests.

Human experience in general as well as pupils' narrow and immediate interests must be examined to discover the values which are most significant in human attainment and progress.

The final objective of education "is to adjust the individual to his environment, not only present but future and ideal."

The curriculum-maker must select from among all truths those which are most significant and practical.

The existence of certain objectives or practices is not a certain proof of their justifiability.

The social aspects of educational aims must be analyzed so as to enable educators to supplant individualistic aims by social aims.

"The structure of a subject varies with its function, and its content with its use."

Actual human activities and needs should be examined in order to find out objectively and specifically what the schools should attempt to do.

As a source of objectives, activity-analysis must be accompanied by an analysis of required standards of performance so as to discover the ideals which dominate performance.

Activity analysis should be supplemented by difficulty analysis.

A survey of local conditions is necessary because the objectives must vary from place to place, from individual to individual, and they must vary according to the equipment of the school, the character of the population, and other social conditions.

"Every item in a curriculum is but a means to an end; it is necessary, therefore, to know what these various ends are."

Characteristics of practical educational objectives are concreteness, clearness and simplicity of meaning, and adaptability to the time and place in which they are proposed as guides.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. Select a tentative attitude toward the secondary school program of studies. Defend your choice.
2. What high school subjects, if any, can be so pursued as to be universal in their benefits?
3. What high school subjects, if any, cannot be so pursued as to be universal in their benefits?
4. Are the following statements true or false?
 - (a) As an argument for special subjects, the disciplinary argument should be discarded.
 - (b) If any contributions of subjects are not now sufficiently disciplinary in character to meet the disciplinary needs, the teachers of such undeveloped subjects can and should make them so at once.
 - (c) There is value in the pursuit of some studies just because they have no economic value.

(d) A subject which is forgotten within five years after it is completed is thereby proved worthless.

5. Prepare a tabular presentation of the sources of educational objectives as follows: in one column name the sources of objectives, and, in another column, catalogue the criticisms, favorable or unfavorable, of each objective.

6. Employ Bobbitt's general plan for deriving educational objectives in the derivation of a list in accordance with each of the sections of Smith's article.

7. To what extent are the objectives which you derived from Smith's article in accordance with the principles stated in Colvin's article?

8. How can a classroom teacher make profitable use of lists of specific objectives such as Bobbitt, has prepared? Illustrate by relating Bobbitt's plan to one or more high-school subjects.

9. In terms of the readings of this chapter, what is meant by scientific curriculum making?

10. Test thoroughly each of the principles at the end of this chapter.

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CHAPTER XV

THE RECONSTRUCTION OF CURRICULA AND SUBJECT MATTER

Adapting work to pupils. Modern educators have attempted to adapt school work to pupils' needs and capacities. Certain attempts at adaptation are still in experimental stages; other attempts seem already to have led to satisfactory readjustments of work.

Leaders in the reorganization of any established forms of procedure ordinarily meet opposition from various sources. Leaders in educational reorganization have been no exception to this principle. Many proposed changes in educational practice have met with bitter opposition because of the way in which the changes have been proposed or introduced into schools. For example, the elective principle in choosing subjects has been applied in such an uncontrolled, haphazard manner as to discredit in certain schools the whole principle of election of courses. Again, courses in general science have been "taught" by inferior teachers of art, civics, or foreign languages, and, as a result of slight returns from the courses, general science itself has been discredited with certain observers. Examples of this sort might be multiplied, but the point is already clear that poor results from a new policy may show absolutely nothing about the merits of the policy itself. Persons who are very prone to criticize adversely whatever is new should bear in mind the fact that certain old policies and courses are sometimes rendered quite as worthless as anything new. For example, unenlightened, groping souls without hope or purpose are at this moment trying to teach traditional mathematics, and in doing so are convincing

certain talented pupils that no good can come from the science of measurement.

The purpose of this chapter is not to present readings which will convince students of the desirability of all proposed forms of reorganization. Instead, the purpose is to provide readings which show certain directions already taken in the reorganization of subject matter. These readings are typical of the best discussions of plans for reorganization. Final judgment cannot be passed upon many of the issues involved in these readings until schools have given the new plans a thorough trial under favorable conditions. If students will follow the history of any one of these lines of educational reorganization they will find that it is common for the leaders in such reorganization to be the severest critics of it.

The general problem of reorganization of subject matter is set forth in the article by Briggs. The article by Glass shows a number of directions which experimentation is taking in the junior high school. The résumé of the Elyria survey shows how the survey method can be utilized in the reconstruction of an entire high-school program of studies. The discussion of mathematics illustrates one of the comprehensive attempts at the reconstruction of courses of study.¹

It is of more than passing interest that the school teachers and officers are taking the initial steps in the progressive activities described in this chapter. This condition indicates that a significant change has occurred, for until recently many educational changes were initiated by persons or organizations outside the schools. For example, Jessup shows that

The pressure which brought about the introduction of music was generated by the organization of public sentiment by people outside the school. The rapid introduction of drawing can be traced to the influence of the public opinion directed by the manu-

¹ See references at the end of this chapter for plans for reconstructing other courses.

facturers of Massachusetts and elsewhere. Economic and humanitarian forces united in consciously creating a pressure which resulted in the introduction of manual training and domestic science. The sudden rise in interest in physical education in the early nineties was due to the organized activities of the German Turners, The Christian Association and private munificence. All of this is a striking commentary on the character of the school as a public institution and on its responsiveness to public opinion and certainly points clearly to the conclusion that these modifications in the curriculum have largely come from without rather than from within the school group.²

CURRICULUM RECONSTRUCTION IN THE HIGH SCHOOL*

BY THOMAS H. BRIGGS

The problem of secondary-school curricula manifests its full scope and difficulty only if the term is expanded from its present technical restrictive sense to include the details of instruction. It is evident on a moment's thought that any judgment as to the proper combination of studies leading to graduation must be superficial and tentative unless there is full knowledge of just what each subject proposes to teach and how. This discussion, therefore, will use the term "curriculum" as comprehending not only a systematic grouping of subjects but also the details included in each subject.

The obstacles to a thorough revision of our secondary-school curricula, the need of which every thoughtful student of education recognizes, are three. First, there is the normal human satisfaction with what is. Probably the great majority of people, especially those to whom original, independent thinking is difficult and unusual, are content to continue without serious questioning practices that have been inherited from the past, practices that to an unanalytic and uninformed mind seem generally to have produced satisfactory results. This majority are given a complacent confidence by the definiteness of existing programs as contrasted with the indefiniteness and lack of agreement in new proposals, especially when the former are set

² Jessup, Walter A. *Social Factors Affecting Special Supervision*. Columbia University, 1911. P. 113.

³ *The School Review*, XXXI, 109-115. February, 1923.

up as requirements, often by those who are *laudatores temporis acti*. The old program apparently produced them; therefore, it must be good for all.

A second obstacle is the lack of clear definitions of ends or aims and consequent fundamental principles. Everyone approves of "education," "the good life," "democratic citizenship," but we may search in vain for any analysis of these ends that is at all definite, extensive, and commonly accepted. As a matter of fact, there is a wide divergence of opinion as to just what are the desirable elements in any one of these commonly stated ends of education. Nothing could do more to give direction to the efforts at curriculum reorganization than a clear analysis of the essential elements of democracy and citizenship, an analysis made by representative publicists of many types and school men working together. Lacking this, each worker in education must make his own analysis and his own formulation of fundamental principles. In attempting this many have been forced back and back, from the earth to Atlas, from Atlas to the supporting terrapin, from the terrapin to the eagle hovering in the void, until they despair of the tremendous task of erecting a structure on an indefinite foundation. The only practical procedure at present is to ascertain the elements that seem to make for effectiveness on different levels of life and then to propose what the school can do to achieve these most successfully in its pupils.

A third obstacle that deters students of curriculum revision is the conviction that any reasonable set of principles consistently applied to the construction of appropriate courses of study would result in a program so different from that generally followed as to make it impossible of anything like application with the organization, equipment, and personnel of our teaching staffs. This conviction necessitates compromises that often weaken the original intentions into mere tinkering. This should not be condemned, however, for it is indubitably leading to improvement, however slow the process may seem to impatient theorists, that manifests itself in syllabi and textbooks, which can take only short steps in advance of the general convictions and desires of those who are to use them.

These obstacles can be measurably overcome and progress accelerated toward better curricula if there is agreement on a plan of procedure. Such a plan, consisting of eight steps, is now to be proposed. Whether accepted as stated or as modified,

such a plan followed by a number of investigators, working separately or in committees, should insure progress toward a more reasonable body of subject-matter better organized for achieving commonly desired ends.

1. The first step is the riddance in our minds, so far as possible, of the idea that anything—organization, departmental division, details, or method—is, merely because of its existence, essential in the new program. Much of the old, as provided later, will be incorporated into the new scheme, but only after being subjected to accepted principles and justifying its right. Let one temporarily imagine himself miraculously bereft of all memory of conventional practices and extraneous requirements but still possessed of his knowledge, attitudes, and habits, however acquired. This is proposed merely to enable each one to attack the problem fairly without the stifling effect of unconsidered tradition.

2. With openness of mind, one is ready to take the next step: the formulation of guiding principles. If the task is seriously undertaken, one must set forth principles that are clearly conceived, comprehensive, and determinant of action. In this matter, at least, everyone must be a thorough pragmatist: any proposed principle that does not aid in answering the questions involved in formulating the new curriculum must be passed by as non-existing.

In a discussion of this type there is space merely for the presenting, without argument or adequate justification, five principles of the kind considered necessary.

(a) Public education is an investment by the state that it may perpetuate itself and promote its own interests. This principle being accepted, it follows that every detail proposed for the new curriculum must contribute in one or another definite way to the perpetuation or the improvement of such social and political life as we consider desirable. The school man must frequently put himself in the place of the supporting state and ask about any detail, "Does this give a reasonable promise of such profit that I am justified in supporting it?" bearing in mind that any detail accepted excludes another competing for a place in the program.

(b) The first duty of the school is to teach pupils to do better the desirable things that they will do anyway. This assumes that the school man can decide, as inevitably someone must do, which of the activities of life are desirable. Lacking any authori-

tative list of such activities, which will, of course, to some extent differ from one community to another and even from one individual to another, the school man must take the responsibility for making tentative decisions and for modifying his list as new factors are discovered. Then he must ascertain the ways in which each of the most important desirable activities may be performed better. This principle is more or less accepted in practice by all makers of syllabi and textbooks. It needs to be more consciously and consistently applied as one of the major criteria of worth.

(c) Another duty of the school is to reveal higher activities and to make these both desired and to an extent possible. To insure progress we must go beyond the preceding principle: we must ascertain or, using our best judgment, postulate for each group of pupils the desirable activities on the next higher levels, and we must from the competing items select those which can be so presented that the pupils will recognize their value and gain a reasonable degree of mastery over them. Revelation alone is not sufficient. A vision, acceptance, seeking, success—all are necessary.

(d) It is wiser to seek positive constructive ends than negative destructive ones. Adolescents will have developed a number of bad attitudes or habits, most of which the adult feels impelled to attack directly. Occasionally it may be necessary to campaign for their destruction, but this principle proposes that for the most part they be driven out by developing positive right attitudes and habits.

(e) Because of the indeterminate persistence in secondary schools of pupils after the end of the period of compulsory education, every course, especially in the lower years, should be so organized that it is of the maximum worth to the extent to which it is pursued. At first thought this principle may seem impossible of acceptance, especially in some of the older and more formalized subjects; but reflection will show that already it has wide application. Most of the work in hygiene, physical education, appreciation of music, pictorial art, and literature, English expression, both written and oral, general science, civics, and economics, is valuable whether the pupils drop out of school immediately or not. As pupils become more certain of their futures and sufficiently matured to appreciate relations, values may be gradually deferred with assurance that at need they will

be real; but there is still a vast amount of improvement in the secondary-school curriculum which can be effected by a serious attempt to apply this principle as extensively as possible.

3. When these or similar principles are accepted, one is ready for the third major step in the procedure, the making of an inventory, as comprehensive as possible, of the knowledge, attitudes, ideals, prejudices, acts, and habits desirable in citizens of a democracy. Beginnings of such inventories have here and there been made in special fields, such as spelling and arithmetic; but consideration needs to be given to all phases of living. Certainly we must record desirable personal relations, co-operative efforts for commonly desired ends, and the like as extensively and as thoroughly as we have in the past the details of the logical organization of the academic subjects. Education in accordance with the principles proposed under step No. 2 concerns all of life. The details inventoried might as naturally be grouped under home membership, the use of leisure time, and civic duties as under mathematics, biological science, and music.

4. The fourth step in the procedure toward a better curriculum is a tentative selection from the inventoried details of those for teaching. This would involve, first of all, the selection of those for which the schools assume responsibility, leaving the others to the home, the church, or to other agencies likely to be effective. To the retained details must then be assigned relative values. This task is another one that demands common-sense decisions, since we lack definitive criteria. And from the evaluated details one must choose those most likely to be of value to local as well as to larger social units.

5. After having progressed so far by independent thinking, one is ready to take the fifth step, the consideration of curricula as they exist in our schools today. These contain many details as valuable to some youth in America now as they were to others in Europe centuries ago when they became a part of the secondary-school pabulum; and they contain, too, other details that have ceased to have great importance if any at all. Every detail now in the curricula must pass the tests as do those newly proposed. As Flexner says, every detail accepted for the program must have a positive case made for it. In this matter prejudice attends either age or youth. With these details must be considered also school buildings and equipment now existing; the teachers in service and prospective, as they are and as they

may be trained; and the textbooks available. It is believed that leadership and encouragement by principals and supervisors will carry many teachers far in the reorganization of the curriculum and that textbook writers will improve their product as rapidly as the demand justifies.

6. The sixth step is assigning the details to the grades in which there is a probability of their being of maximum value according to the principles proposed, the achievements already made in the lower years, and the maturing power of assimilation by the pupils. Such assignments can in the beginning be made only tentatively, of course. So far as details have been previously taught, advantage should be taken of old experiences; but new items must be assigned according to the best combined judgments available, with the understanding that they will be freely shifted as experiment reveals the need.

7. As we are very generally agreed now that subject-matter and method are closely interrelated, the seventh step is the proposal of appropriate methods of organization, of presentation, of providing motives, and of directing individual or group work. Several of the principles under the second step concern methods of work as well as subject-matter; and it is here urged that effective methods of work be as seriously sought and as soundly implanted in general habits as the mastery of facts or principles.

(8) The eighth and final step proposed is the trial of the developed curriculum under varied conditions, the careful measurement of results, and subsequent modifications for improvement. It should go without saying that, however developed, an ideal curriculum can never be static and permanently fixed; rather, it must be dynamic and constantly adapted to varying needs of pupils and to varying conditions in the local and larger social groups. But there will doubtless be for each generation a more or less fixed core, both in the courses of study and in the curriculum, the term here being used in its technical sense of a group of studies leading to graduation.

This proposal briefly outlines a theoretical plan for attacking the curriculum problem. No principal and faculty planning for next year's announcement can find in it a satisfactory answer to all of the questions that are involved; indeed, it would require the concentrated and undivided attention of many able minds for years. Neither does any enlightened program for developing moral character give immediate, definitive, and final answers to

all of the questions of conduct. But just as the Golden Rule guides us in determining moral actions and moral attitudes, which we hope become higher and better with development, so it is hoped that these principles of procedure, or similar better ones, will make their contribution, here a little and there a little, to the guidance of a series of actions all leading toward a distant ideal constantly becoming higher as our vision grows clearer.

THE RECONSTRUCTION OF THE PROGRAM OF STUDIES FOR THE JUNIOR HIGH SCHOOL⁴

BY JAMES M. GLASS

1. *Variation of curriculum practice.* In all sections of the country the conviction is spreading that the outstanding characteristic of a real junior high school is a reorganized program of studies which shall be a composite of elementary and secondary courses, which shall articulate elementary and secondary education, and which shall "help the pupil to explore his own aptitudes and to make at least provisional choice of the kinds of work to which he will devote himself."⁵

Experimentation in the administration of the curriculum is today characteristic of practically all junior high schools organized for a period of two or more years. Widespread experimentation inevitably leads to variation in practice equally as widespread. Variation leads to unavoidable temporary confusion, differences of opinion, and all of the helpful discussion from which, in every educational movement, come progress and achievement. (It seems desirable) that no definite check should be placed on experimentation but that the prevailing curriculum practices should be studied, with the objective at a later date, to summarize these practices and to formulate a plan of curriculum-making with the background of experimentation and of the survey of typical curriculum administration.

2. *Experimentation needed in the process of evolution.* The present situation in the widespread experimentation with junior high school courses of study is dynamic; it has already been productive of much progress and is prophetic of greater progress yet to come. I am confident that I reflect the judgment of all

⁴ *The School Review*, XXXI, 518-531. September, 1923. Abridged.

⁵ *Cardinal Principles of Secondary Education*. United States Bureau of Education Bulletin No. 35, 1918. P. 18.

junior high school men and women actively participating in the movement when I say that the situation must continue as plastic as it is today. Experimentation must not cease; differences of opinion and discussion in the selection of materials and methodology must continue unhindered; tentative must remain as the characteristic modifier of each junior high school course of study; and the process of evolution must continue until both participants and critics of the reorganization of the program of studies recognize and acclaim the present period of evolutionary experimentation as the single most healthful symptom of the junior high school movement. We must curb our impatience and await the slower and surer gains which will come from lapse of time, deliberate judgment, and scientific experimentation.

A generation of educational experimentation is time brief enough for the achievement of the far-reaching objectives which confront the transitional unit of the public schools. Briefer time might suffice were the objectives of the junior high school confined to its own sphere as a distinct and isolated unit of organization. But the strategic position of the junior high school as the intermediate school of transition involves a reaction on the elementary school and the senior high school which is now demanding, and will increasingly demand readjustments in the entire public school system.

3. *Coordination of administrative units needed.* The isolation of administrative units, particularly the elementary-school and the high-school units, was the chief indictment of systems of schools preceding the 6-3-3 plan. The primary objective of the junior high school, as the unit of transition, is articulation. Until the junior high school ceases to be regarded exclusively as an isolated unit of organization and of educational experimentation, there cannot be that unanimity of mutual understanding which alone can bring the united efforts of elementary and secondary schools into focus for a concerted solution, not merely of junior high school problems, but of the greater problems of an articulated public-school system.

What is chiefly needed today is recognition on the part of school administrators, supervisory officers, elementary-school faculties, junior high school faculties, and senior high school faculties, of their common obligation to participate in the solution of the curriculum problems of the transitional school, because of its strategic relation to the whole system of schools and its

inevitable reaction on curriculum practices in the schools adjoining it as its inlet and its outlet.

The continued evolution of the junior high school program of studies must soon close the chapter under the caption "The Reorganization of the Seventh, Eighth, and Ninth Grades" and open another far more important chapter under the caption "The Coordination of the 6-3-3 Plan of School Administration." Emphasis must ultimately be shifted from curriculum reorganization on horizontal or isolated levels of the public school system, viz., the elementary school, the junior high school, and the senior high school, to the vertical or continuous administration of the curriculum. In this shift of emphasis will come to all three administrative units a common purpose, greater than any single unit can assume, to coordinate courses of study throughout the elementary and secondary fields.

It is entirely appropriate that the junior high school as the unit of transition recognize this need and propose to the elementary school and to the senior high school a concerted effort to articulate courses of study with vertical or continuous development in each subject of instruction. The junior high school recognizes, after a decade of curriculum experimentation in its horizontal or isolated level of administration, that its own courses of study in English, mathematics, social studies, natural science, fine and practical arts, school health, guidance, and secondary-school electives are inadequate to the degree that they have failed to secure articulation and continuity with the elementary-school course of study or with the senior high school course of study or with both. This first stage of an isolated reorganization of curriculum practice in the intermediate or transitional unit must inevitably lead to a second stage infinitely more important, viz., the coordinated reorganization of each course of study throughout the whole range of the school system. At the same time the senior high school is free to concentrate on the responsibility which it shares with the other units to complete the social integration of all pupils, however differentiated in their individual educational and vocational objectives.

The senior high school program of studies is increasingly developing a body of social-science materials, English and literature, mathematics, science, and fine and practical arts, which are the common need of all of the differentiated groups. The senior high school, if free to concentrate on intensive specialized courses

and a core curriculum of constants, will consummate the socially integrating influences of the elementary school which are now continued in a modified form in the junior high school program of studies and administration.

4. *Causes of delay in curriculum reorganization.* By force of urgent necessity, the junior high school has been confronted with problems of organization and administration which have too frequently absorbed exclusive attention or delayed progress in curriculum reorganization. The demands of a new type of school plant and fixed equipment would tolerate no postponement. The administrative problems of the classification of pupils of ability groups, the use and interpretation of intelligence tests, subject-promotion with all of its problems of remedial and preventive measures for retardation, home-room organization, organized school activities, adoption of guidance plans, differentiation of electives, and the development of a technique of administrative records—all of these problems and many kindred needs demanded immediate solution and smooth operation, and in the early years of the junior high school movement partially prevented concentration on the more vital need of a reorganized program of studies.

5. *Development of the junior high school program of study.* Thus far the discussion has been restricted to the present need of co-operation on the part of the three units of the school system in articulating all courses of study. We wish also to direct your attention to the already extensive development within the junior high school itself of a reorganized program of studies.

The junior high school inherited its program of studies in part from the elementary school and in part from the high school; a third source was the industrial and commercial fields and the home; a fourth contribution, which the junior high school together with the senior high school deliberately sought, was received from the rapidly expanding field of social-science materials and social and civic activities to the end of socializing the content and method of all courses of study and of giving to adolescents "a self-conscious social adjustment."

These inheritances came chiefly as isolated and unassimilated units of instruction. From the elementary school came the common branches—English composition, technical language, reading, literature, spelling, penmanship, arithmetic, geography, history, music, drawing, physical education, some manual training and home economics, some social science or civics, and some

nature study. From the senior high school came the constants in English, mathematics, and social studies, and the extensive array of secondary-school electives—Latin, French, Spanish, and the intermittent German, algebra, geometry, biology or general science, ancient history and European history, commercial courses in bookkeeping, typewriting, commercial mathematics, and business practice, the general shop or practical arts courses, the general home economics courses, and the vocational types of both the last two.

The introduction of such a formidable array of isolated units of instruction into the junior high school program of studies led to a great variety of courses which many non-constructive critics of the junior high school have advanced as the chief objection to the junior high school on the ground, perfectly defensible at the beginning of the movement, that it involved a scattering snap-shot exposure of pupils to a hodgepodge program of studies. Serious reflection on the development of the junior high school's administration of its curriculum will convince any fair-minded student of the movement that the introduction of these varied and unassimilated units of instruction was not only unavoidable but even desirable in order that there might be created in the minds of administrators, supervising agencies, and junior high school participants a clear consciousness of the magnitude of the problem of articulating elementary and secondary courses of study.

From the inception of the junior high school, efforts have been continuous to consolidate unassimilated subjects of instruction into larger and more comprehensive groups. Gradually, practice has developed a few comprehensive units of study within which the unassimilated subjects inherited from the elementary school and the high school have been articulated, e.g., English and languages, mathematics, social studies, natural science, fine and practical arts, school health, and one option among a group of electives in the latter half of the junior high school. Electives have been differentiated as the initial choices within the academic, the commercial, the technical, the vocational, and the fine-art curriculums. The questionnaire submitted by the subcommittee last year revealed a large preponderating vote in favor of six one-clock-hour periods; four of these periods are distributed to the major branches which persist as constants through the junior high school, viz., English, social studies, mathematics, and science; one period is devoted to fine and practical arts; and the sixth

period is given to school health; organized school activities and guidance become part-period work. The reduction of the time allotment to the constants provides for the introduction of electives in the latter half of the junior high school period.

It is significant to note that the four major constants and fine and practical arts, school activities, school health, and guidance are becoming in many junior high schools continuous throughout the entire junior high school period. This is a modification of former practice, which gives much hope that the ninth grade is becoming more closely articulated with the seventh and eighth grades or that the practice of looking upon the ninth grade as the first year of the high school is being discontinued in favor of a greater purpose to make it an integral and coordinated part of the junior high school itself. The principle of continuity of courses of study throughout the three-year period must eventually eliminate previous distinctions of demarcation between the seventh and eighth grades and the ninth grade.

The very nearness of the junior high school to its own movement prevents a clear conception of its progress toward more comprehensive or general courses of study which have gradually replaced the assorted units of instruction which were bequeathed to it a decade ago. Elementary and secondary courses of study have been and will continue in the process of articulation; through this process the transitional unit of the public-school system, by reason of its freedom from educational tradition, has been able to undertake, through effective coordination, the elimination of gaps between elementary and secondary education.

Witness the evolution of social studies or social science in the junior high school program of studies—an articulation of elementary-school history, geography, and elementary civics with secondary-school ancient history, European and modern history, community civics, vocational civics, and economic civics. The junior high school lays no claim to the solution of this problem, but it does maintain that, by initiating the consolidation of these unassimilated units, it has taken a vital step toward effective articulation of elementary and secondary courses in the social-science field.

Witness again the evolution of a course in general mathematics which is articulating elementary-school arithmetic with secondary-school algebra, geometry, and numerical trigonometry. Again, the experiment of general or composite mathematics must extend

over a period of years to evolve its own content and method. The significant fact, however, is in the effort to articulate elementary and secondary courses of study for the sake wholly of adolescents who must make the shift from one to the other and who can make the transfer more readily through the articulation of elementary arithmetic with secondary mathematics than through the former abrupt transition from exclusive arithmetic to exclusive algebra.

Witness also the development of a general course in science which is articulating the nature-study of the elementary school with the biology, physics, chemistry, and physiography of the senior high school. No brief decade of experimentation can adequately solve the problem of the articulation of nature-study with the cross-sectioned courses in science in the high school. But the significant fact in this instance is that an articulated general course in science, vitalized throughout by constant contact with the life and environmental experiences of early adolescent youth, is the only course in science which can be given to pupils too immature for the pure science studies of the senior high school. It will be a contribution of incalculable value to this modern age of scientific life and achievement if the junior high school succeeds in establishing science as one of the required constants in the program of studies in secondary education.

Witness also the evolution of vocational or trade-training courses of industrial education into the present wide-spread general shop course in home economics as a constant for all girls through the three years of the junior high school. The fact that 85 per cent of these girls are destined to become home-makers is ample justification for this development.

Witness the introduction junior business training as a required subject in the junior high school program of studies to survey the field of commercial education to help pupils to discover aptitudes for commercial training, and to reveal to them the wide range both of commercial education and of its rapidly expanding vocational opportunities. Junior business training or any similar introductory commercial course assures to all pupils a knowledge of the principles and practices prevailing in the commercial world—a knowledge which should be an educational heritage of every adolescent youth.

Witness the continuation of music and art as required constants in the junior high school program of studies. The pur-

pose of the elementary school to make the æsthetic and cultural values of music and art the common right of all pupils has been accepted by the junior high school, which in turn is discovering for many pupils the vocational values of the fine arts. Time alone can reveal the readjustment in the senior high school program of studies which will be undertaken when the present required and elective courses in music and art in the junior high school have become more firmly established. The vertical or continuous supervision of music and art through the school system which prevails in most cities will accelerate the extension of music and art as required and elective courses in both secondary schools, probably far beyond the extension of such courses today, significant as the present fine arts courses are in comparison with the almost total absence of such courses a few years ago.

There has long been a need of articulating the school-health program of the elementary school for all pupils with the athletic program of the secondary school too frequently restricted to the few in least need of physical training. The school-health programs of both the junior high school and the senior high school are being formulated today on principles which receive the sanction of the medical profession and which, by reason of the far-sighted vision of many superintendents, are receiving the direction of specialists in school health. The rapid evolution of health and hygiene education, as well as physical and athletic training, is evidenced by the adoption of a greater time allotment for school health in many junior high schools, varying from a minimum of two-clock-hour periods a week to four and five periods a week.

The isolated and unassimilated units of instruction which the junior high school inherited are being articulated into more comprehensive subject groups designated as English, general social science, general mathematics, general science, general home economics, general shop, school health, and other better articulated courses of study. The marvel is, not that more has not been accomplished, but that so much has been achieved to fulfil the primary mission of the junior high school in the public school system, viz., the welding together of its three units by the articulation of elementary and secondary education. Any educational agency or institution which can within a decade reveal a development from unassimilated to coordinated courses of study may be permitted to ignore non-constructive critics and assume the

prerogative of inviting the constructive and co-operative aid of the elementary school and the senior high school in the further extension of coordination.

6. *Guiding principles for further reorganization of courses of study.* Each junior high school course of study should (1) proceed by natural, transitional, and progressive stages to the articulation of elementary and secondary education; (2) develop from "simpler aspects"⁶ characterizing the junior high school toward "refinements"⁷ characterizing the senior high school; (3) provide a survey of the subject field for the discovery of individual aptitudes and for the revelation of educational and vocational opportunities; (4) deal with the life, environmental experiences, and the immediate needs of early adolescent pupils that "school may be life, not merely preparation for life,"¹² (5) conserve the interests of those who drop out and of those who continue by unit organization in each year of its development to the end that each year of work may be of definite value to those who go no farther; and (6) assure an apperceptive basis for later cross-sections of the general courses of study when specialization in subdivisions of each subject field is undertaken in the senior high school and higher institutions.

7. *Summary.* The junior high school program of studies should continue, with modifications, the single curriculum of the elementary school. Through its general courses of study, it should expand the single curriculum into an enriched and varied curriculum. In a gradually increasing degree, it becomes the initial stage of all secondary-school curriculums. It should become the source of an apperceptive basis for later senior high school courses; it should "reveal higher types of activities, make these both desired and to an extent possible."¹³ It should offer assurance of intelligent educational choice and wise educational placement. It should make possible a tentative or provisional choice of electives. It should increase the probability that pupils will persist through the initial stages of secondary-school courses in

⁶ *Cardinal Principles of Secondary Education.* United States Bureau of Education Bulletin No. 35, 1918. P. 17.

⁷ *Ibid.*

¹² John Dewey. *The School and Society.* University of Chicago Press, 1915. Chapter II.

¹³ Thomas H. Briggs. *The Junior High School.* Houghton Mifflin Co., 1920. P. 157.

the junior high school and thus also increase the probability that they will continue these courses and complete the specialized curriculums of the senior high school.

The survey as a basis for reconstructing the program of studies. During the academic year of 1916-1917, an educational survey of Elyria, Ohio, was conducted under the direction of the United States Commissioner of Education. The report of this survey of a city with an estimated population of 20,000 to 25,000 illustrates a plan or technique which can profitably be pursued as a whole or in part in other communities. The following account which is adapted from the report upon the high school program of studies¹⁴ illustrates the utilization of sociological data in the reconstruction of school curricula.

The program of studies of the high school at Elyria, Ohio, is divided into three curricula—the classical, commercial, and industrial. The classical curriculum is described as “a straight road to the college of arts. Colleges generally require four to six credits of foreign languages, Latin or German, or both, one or two of history; two of science, two or three of mathematics and three of English; the remaining units may be elected, as shown below, making a total of 15.” The commercial curriculum aims “to give a practical business course and to broaden the mental horizon by valuable supplementary academic studies.” The industrial curriculum, according to the printed course of study, leads “directly to such technical schools as Case, Ohio State, or Boston, which will accept four credits in manual training. Without looking forward to the university it fits the student for more effective work in various industrial lines.” The three curricula follow:

The distribution of the pupils among the several curricula is as follows:

¹⁴ Adapted from pp. 76-92 of the *Educational Survey of Elyria, Ohio*. United States Bureau of Education Bulletin 1918, No. 15. The portion of the survey report from which this adaptation was made was conducted by William F. Russell.

PERCENTAGE OF PUPILS ENROLLED IN VARIOUS CURRICULA

CURRICULA	TOTAL PER CENT	BOYS PER CENT	GIRLS PER CENT
Classical	43	34	51
Commercial	18	11	23
Industrial	38	54	23
Mixed	1	1	1

The principle upon which these curricula were formed is obviously a good one. There is not a wide elective system, trusting the work of the pupil to the varied whims and unfounded choices of the pupils. An effort has been made to group the courses of study in an organized series leading to certain specific types of work to be followed after leaving school.

To test the efficiency of this distribution certain questions must be answered: (1) Are too many curricula offered, dissipating the energies of the school? (2) Are too few curricula offered, sacrificing the interests of any considerable numbers of pupils? (3) Are the curricula as they are arranged at present composed of the wisest selection of courses possible under present conditions? (4) Are the pupils receiving adequate guidance in their selection of the particular curriculum which they wish to pursue?

1. *Are too many curricula offered?*

There are two valid reasons why, under certain circumstances, a very few curricula should be offered. In a small school where there are very few teachers the multiplication of sections dissipates the energies of the school. In a school where all the children come from families of the same class and are bound for similar occupations, multiplication of sections and curricula is unnecessary. Elyria High School fulfills neither of these conditions, because (a) *the school is large enough to give many more curricula without dissipating its energies, and (b) the school draws its pupils from such a variety of homes that wide variation in its program of studies is highly desirable.* A questionnaire was addressed to the pupils of the high school, asking each for the occupation of his father. The types of occupations rank in the following order:

	Per cent		Per cent
Industry	31.2	Transportation	6.0
Agriculture	19.8	Personal service	4.1
Trade	17.1	Express, etc.	2.2
Professional	8.9	Clerical service	1.7
Others	8.7	Public service	1.0

2. *Are too few curricula offered, sacrificing the interests of any considerable number of pupils?*

It is of course out of the question to provide under a system of group instruction the very best possible curriculum for every student. The question is whether or not the classical, commercial, and industrial curricula as they now stand are taking care in the most efficient way of all the large groups of pupils who are likely to engage in similar work after leaving school. The ideal way to test this would be to procure the history of all the children who had entered the high school during the past 10 years, trace their experiences after leaving school, and upon that as a basis obtain an idea of the experiences which it is probable the pupils now in school will have after they leave. So far as the investigator was able to determine, no such information is available. The following data contained in Tables XXXIX-XLII will, however, serve almost as well:

TABLE XXXIX

OCCUPATIONS WHICH THE STUDENTS OF ELYRIA HIGH SCHOOL
PLAN TO FOLLOW

	PER CENT	
	Boys	Girls
<i>Students planning to enter:</i>		
Professional life	31.1	32.2
Trade	8.4	2.2
Industry	12.0	.3
Transportation	.7	—
Clerical service	3.3	23.9
Farming	8.0	—
Personal service	—	1.0
Undecided	36.2	30.9

TABLE XL

PRESENT OCCUPATIONS OF STUDENTS WHO GRADUATED IN 1915 AND 1916

	PER CENT	
	Boys	Girls
<i>Graduates engaged in:</i>		
Further study	30.8	34.0
Professional work	3.8	22.7 (teaching)
Trade	7.7	2.0
Industry	36.4	2.0
Clerical work	9.6	19.5
Telephone operating	—	1.0
Domestic service	—	18.0
Other occupations	11.9	—

TABLE XLI

PRESENT OCCUPATIONS OR ACTIVITIES OF OLDER BROTHERS AND SISTERS WHO AT LEAST ENTERED HIGH SCHOOL

OCCUPATIONS OR ACTIVITIES	PER CENT	
	Brothers	Sisters
Further study	12.4	7.9
Professional work	4.9	16.6
Trade	9.0	—
Industry	44.1	—
Transportation	1.7	—
Public service	5.8	—
Clerical work	11.6	24.2
Farming	9.6	—
Personal service	—	44.7 ¹

¹ Married 34.9 per cent.

On the basis of these data it is probable that most of the boys and girls in Elyria High School will fall into the following well-defined groups and that each group will have a sufficient number of members to warrant consideration:

(1) Boys who will engage in further study—

- (a) In the classical course, as in Oberlin or Kenyon
- (b) In the general course, as at Ohio State, Western Reserve, Ohio Wesleyan, etc.

TABLE XLII

OCCUPATIONS AND ACTIVITIES OF ALL PERSONS WHO ENTERED HIGH SCHOOL
WITH PRESENT SENIOR CLASS

	PER CENT	
	Boys	Girls
Still in school	50.6	66.1
Trade	12.9	—
Industry	19.4	3.3
Transportation	5.4	—
Telephone operator	—	9.0
Personal service	1.1	10.1
Clerical work	—	10.1
Agriculture	5.4	—
Unknown	4.3	1.1
Loafing	1.1	—

(c) In the engineering or scientific work, as at Case or Ohio State

(2) Girls who will engage in further study—

(a) In the classical course, as (1a)

(b) In the general course, as (1b)

(c) In the Ohio Normal School, at Kent

(d) In the Elyria training course

(e) In the Oberlin Conservatory of Music

(3) Boys who will engage in industry

(4) Boys who will engage in business, mostly clerk work

(5) Boys who will farm

(6) Girls who will teach without further preparation

(7) Girls who will be married or help at home

(8) Girls who will engage in business, mostly as clerks or stenographers.

Having these well-defined groups in the student body, let us now consider the manner in which they are served in the present curriculum of the school. In investigating this question each pupil was asked why he had chosen to enter the curriculum which he was following. The results are given in the following tables:

Reasons given by boys for electing the various curricula:

	<i>Number of Students</i>
CLASSICAL	95
Planning to go to college.....	63
"May go to college; and if I do, I wish to prepare"...	12
Gives the best general education.....	12
To be a musician.....	3
To help in specific work, such as pharmacist, doctor, lawyer, writer, etc.	11
Vague and indefinite reasons.....	11
COMMERCIAL	28
To engage in office work.....	21
Vague and indefinite.....	7
INDUSTRIAL	146

"Fits me for the work I am planning to do".....	63
"Because I like it".....	34
To prepare for college.....	17
To prepare for farming.....	14
To gain an idea of various lines of work.....	10
Vague and indefinite.....	16

Reasons given by girls for electing the several curricula:

CLASSICAL	156
Planning to go to college.....	66
May go to college, and would like to be prepared.	33
Prepares for teaching.....	22
Prepares for the normal school.....	4
Have to have four years of language for the Oberlin Conservatory of Music.....	12
Best general training. (One girl said: "Best training for an undecided person").....	13
Best training for a prospective nurse.....	6
Vague and indefinite.....	18

	<i>Number of Students</i>
COMMERCIAL	76
To prepare for stenography or bookkeeping.....	56
To go to business college.....	3
Vague and indefinite. ("By taking this course, I'll get it rather than let it get me, because I am poor in mathematics")	14
Couldn't stay more than two years in high school....	3
INDUSTRIAL	69
"Because I like it".....	27
To be a milliner, housewife, etc.....	29
Best for a nurse.....	3
Best general training.....	3
Vague and indefinite.....	7

Under the present conditions, choices of curriculum are made for widely varying reasons. All pupils who plan to go to college or normal school (except the engineers) select the classical course. Those who are undecided select the classical course. A smaller number that have other fairly definite ambitions, go into the other lines. There are more significant groups of pupils than there are curricula provided. This brings us to our third question:

3. *Are the curricula as offered as efficient as they might be in meeting the future needs of the pupils therein registered?*

The classical curriculum enrolls those who are planning to go to college (except the engineering students) and those who think that there is some slight probability of their going on to further academic work. It enrolls boys and girls who are planning to go to the conservatory of music, girls planning to teach, with or without additional training. It also enrolls a group of doubtful students.

The commercial curriculum enrolls but one significant group of students, those who plan to enter business as clerks, bookkeepers, or stenographers. It appears that a few students are taking the commercial and other curricula with the idea of going to a business college. Why is this?

The industrial curriculum enrolls a variety of groups. They include boys planning: To enter the engineering or scientific courses in college, to enter industry, to become farmers, market gardeners, and dairymen; and girls planning to specialize in various phases of home economics or art work, or to conduct homes of their own or to help at home. The curriculum as at present arranged is not sufficiently diversified to meet all these needs. Those preparing for the engineering schools need a certain distinct distribution of courses.

More than 80 boys in the Elyria High School live in rural communities. Nearly one-fourth of the older brothers of these children, who at least entered high school, are farming. A separate curriculum is needed for this group.

On the basis of the experience of previous classes, it seems that a large percentage of girls should have more work in home economics, and that a complete curriculum designed to prepare for homemaking should be devised. The value of mathematics, such as algebra and geometry, for girls preparing to be home makers is doubtful; chemistry and physics, more adapted to the needs of girls, should be introduced. Where there are four sections of physics and two of chemistry, one section in each might well be specially adapted to the needs of girls.

In particular the course is weak in failing to provide as much as possible for the boys and girls who are forced to drop out of school. The teachers and administrators of high schools must keenly realize that less than one-half of the children who enter as freshmen will ever graduate.

The group that seems to be treated with the least consideration is the group which leaves school before graduation; those pupils receive the smallest return for their efforts, in proportion to time spent. This group must of necessity be more or less neglected. Any plan, however, which will strengthen and make more vital the work of the earlier years will improve the arrangement of the program of studies. The commercial curriculum and the agricultural phase of the industrial curriculum especially sin in this particular. No vital commercial work is given in the first year, nor is there any in agriculture; yet of the older brothers who are farmers, 11 graduated and 11 did not; and of the older brothers who are in business, 10 graduated and 10 did not. Of 52 older sisters engaged in office work, only 32 graduated.

4. Do the pupils receive adequate guidance in their choice of a curriculum?

The organization of studies is into a series of curricula, each devised to meet some definite need in an effort to steer between the elective system and the system of hard and fast requirements. It seeks to avoid random and aimless selection of courses of the one and at the same time to eliminate the hard and fast nature of the other, which has its only justification in poverty or in a belief in formal discipline. Under the curriculum plan each pupil has free choice of the general line which he wishes to pursue, but having made this choice, he is compelled to follow that specific line of work for the rest of his years in high school that he may achieve the results which follow thoroughness and continuity of attack. It is exceedingly important for the success of this system, however, that the pupils receive just, impartial, and adequate guidance in their selection of a curriculum.

It is necessary that Elyria High School take more vigorous steps in this direction in the future. At present a little booklet giving the curricula offered, the words of description quoted, and certain other rules and regulations is distributed to the children of the eighth grade shortly before they are ready to enter high school. The city superintendent visits each eighth-grade class and makes a little talk. The teachers try to help. This guidance is insufficient. There are several reasons for this. The teachers in the grades are not in possession of sufficient information to guide their children wisely. One teacher told the investigator, with some pride, that nearly all of her children had elected the classical course, so that they might enter college. Upon being asked if she knew which colleges in northern Ohio demanded such preparation she admitted that she did not know, but "supposed that they all did." Too many of the children, in answering the questionnaire previously mentioned, were indefinite and vague in their statement of the reasons which prompted them to enter a particular course. This is natural, since they had never been put in possession of sufficient facts to warrant a satisfactory judgment. Further, the parents need enlightenment in this matter. Too often the children are advised by parents who have not sufficient facts at hand to know which curriculum a child ought to elect. Still further, children need to be protected from the propaganda advanced by alert, intelligent, but too often misguided and partial teachers. Too many children have been enticed into classical or

industrial curricula by organized campaigns carried on by teachers of these subjects. The only remedy is to acquaint teachers, parents, and pupils alike with such facts as have been determined. It would be highly desirable for the board of education to have a booklet prepared giving each curriculum in detail, just what it leads to, just what preparation is needed, what the rewards are likely to be, what modifications, if any, can be made. Some of the history of previous classes could well be introduced, and the probable experience of present classes in this light could be predicted. Distributing this material well in advance of entrance to high school, encouraging discussion of it in class, at home, and at parent-teacher meetings, and eliminating scattered and casual recommendation, would help to prevent misfits, to put square pegs in square holes, and round pegs in round holes. At least serious discussion of this problem should occupy several faculty meetings. It can not be hoped that every child will be served with equal adequacy, but only that more children will be served efficiently than at present.

The following recommendations are therefore made:

1. That the present three curricula be expanded and molded more directly with certain results in mind. The following is suggested as a minimum:
 - a. The classical course entrance curriculum, preparing for Oberlin and Kenyon.
 - b. The general curriculum, preparing for other colleges of arts.
 - c. The scientific college preparatory curriculum, preparing for Case School of Applied Science, Ohio State, and the like. This course should also provide for most of the boys preparing for industry.
 - d. The commercial curriculum, arranged substantially as at present.
 - e. The agricultural curriculum, giving more thorough work in agriculture.
 - f. The home economics curriculum, giving a definite line of work for home makers, eliminating abstract mathematics, and including science work better designed for the needs of girls.
2. That the authorities consider the need of a curriculum better adapted than these to the needs of prospective teachers.

3. That the authorities consider whether there is sufficient facility and demand to warrant a special course in arts and crafts.
4. That every effort be made to put more vital work in the earlier years of the high school.
5. That the board of education, in coöperation with the high-school faculty, publish a booklet giving much more detailed information about the courses offered and probable demands and results, in order that more adequate guidance may result; and that the high-school faculty consider this problem with care.

THE RECONSTRUCTION OF MATHEMATICS ²¹

To the end that all pupils in the period of secondary education shall gain early a broad view of the whole field of elementary mathematics, and, in particular, in order to insure contact with this important element in secondary education on the part of the very large number of pupils who, for one reason or another, drop out of school by the end of the ninth year, the National Committee recommends emphatically that the course of study in mathematics during the seventh, eighth, and ninth years contain the fundamental notions of arithmetic, of algebra, of intuitive geometry, of numerical trigonometry, and at least an introduction to demonstrative geometry, and that this body of material be required of all secondary school pupils.

Careful study of the later years of our elementary schools, and comparison with European schools, have shown the vital need of reorganization of mathematical instruction, especially in the seventh and eighth years. The very strong tendency now evident to consider elementary education as ceasing at the end of the sixth school year, and to consider the years from the seventh to the twelfth inclusive as comprising years of secondary education, gives impetus to the movement for reform of the teaching of mathematics at this stage.

A discussion of mathematical education, and of ways and means of enhancing its value, must be approached first of all on the basis of a precise and comprehensive formulation of the valid aims and

²¹ Adapted from Chapters I to III of *The Reorganization of Mathematics in Secondary Schools*. A report by the National Committee on Mathematical Requirements under the auspices of the Mathematical Association of America. J. W. Young, chairman. 1923.

purposes of such education. Only on such a basis can we approach intelligently the problems relating to the selection and organization of material, the methods of teaching and the point of view which should govern the instruction, and the qualifications and training of the teachers who impart it. Such aims and purposes of the teaching of mathematics, moreover, must be sought in the nature of the subject, the rôle it plays in the practical, intellectual, and spiritual life of the world, and in the interests and capacities of the students.

Before proceeding with the formulation of these aims, however, we may properly limit to some extent the field of our enquiry. We are concerned primarily with the period of secondary education—comprising, in the modern junior and senior high schools, the period beginning with the seventh and ending with the twelfth school year, and concerning itself with pupils ranging in age normally from 12 to 18 years. References to the mathematics of the grades below the seventh (mainly arithmetic) and beyond the senior high school will be only incidental.

Furthermore, we are primarily concerned at this point with what may be described as “general” aims, that is to say aims which are valid for large sections of the school population and which may properly be thought of as contributing to a general education as distinguished from the specific needs of vocational, technical, or professional education.

1. The aims of Mathematical Instruction

With these limitations in mind we may now approach the problem of formulating the more important aims that the teaching of mathematics should serve. It has been customary to distinguish three classes of aims: (1) Practical or utilitarian, (2) disciplinary, (3) cultural; and such a classification is indeed a convenient one. It should be kept clearly in mind, however, that the three classes mentioned are not mutually exclusive and that convenience of discussion rather than logical necessity often assigns a given aim to one or the other of these classes. Indeed, any truly disciplinary aim is practical and, in a broad sense, the same is true of cultural aims.

Practical aims.—By a practical or utilitarian aim, in the narrower sense, we mean then the immediate or direct usefulness in life of a fact, method, or process in mathematics.

1. The immediate and undisputed utility of the *fundamental processes* of arithmetic in the life of every individual demands our first attention. The first instruction in these processes, it is true, falls outside the period of instruction which we are considering. By the end of the sixth grade the child should be able to carry out the four fundamental operations with integers and with common and decimal fractions accurately and with a fair degree of speed. This goal can be reached in all schools—as it is being reached in many—if the work is done under properly qualified teachers and if drill is confined to the simpler cases which alone are of importance in the practical life of the great majority. Accuracy and facility in numerical computation are of such vital importance, however, to every individual that effective drill in this subject should be continued throughout the secondary school period, not in general as a separate topic, but in connection with the numerical problems arising in other work. In this numerical work, besides accuracy and speed, the following aims are of the greatest importance:

(a) A progressive increase in the pupil's understanding of the nature of the fundamental operations and power to apply them in new situations. The fundamental laws of algebra are a potent influence in this direction. (See 3, below.)

(b) Exercise of common sense and judgment in computing from approximate data, familiarity with the effect of small errors in measurements, the determination of the number of figures to be used in computing and to be retained in the result, and the like.

(c) The development of self-reliance in the handling of numerical problems through the consistent use of checks on all numerical work.

2. Of almost equal importance to every educated person is *an understanding of the language of algebra* and the ability to use this language intelligently and readily in the expression of such simple quantitative relations as occur in every-day life and in the normal reading of the educated person.

Appreciation of the significance of formulas and ability to work out simple problems by setting up and solving the necessary equations must nowadays be included among the minimum requirements of any program of universal education.

3. The development of the ability to understand and to use such elementary algebraic methods involves a study of the *fundamental laws of algebra* and at least a certain minimum of drill in algebraic

technique, which, when properly taught, will furnish the foundation for an understanding of the significance of the processes of arithmetic already referred to. The essence of algebra as distinguished from arithmetic lies in the fact that algebra concerns itself with the operations upon numbers *in general*, while arithmetic confines itself to operations on *particular* numbers.

4. The ability to understand and interpret correctly *graphic representations* of various kinds, such as nowadays abound in popular discussion of current scientific, social, industrial, and political problems, will also be recognized as one of the necessary aims in the education of every individual. This applies to the representation of statistical data which are becoming increasingly important in the consideration of our daily problems, as well as to the representation and understanding of various sorts of dependence of one variable quantity upon another.

5. Finally, among the practical aims to be served by the study of mathematics should be listed familiarity with the *geometric forms* common in nature, industry, and life; the elementary properties and relations of these forms, including their *mensuration*; the development of *space-perception*; and the exercise of *spatial imagination*. This involves acquaintance with such fundamental facts as congruence and similarity and with such fundamental ideas as those concerning the sum of the angles of a triangle, the Pythagorean proposition, and the areas and volumes of the common geometric forms.

Among directly practical aims should also be included the acquisition of the ideas and concepts in terms of which the quantitative thinking of the world is done, and of ability to think clearly in terms of those concepts. It seems more convenient, however, to discuss this and, in a broad sense, the same is true of cultural aims.

Disciplinary aims.—We would include here those aims which relate to mental training, as distinguished from the acquisition of certain specific skills discussed in the preceding section. Such training involves the development of certain more or less general characteristics and the formation of certain mental habits which, besides being directly applicable in the setting in which they are developed or formed, are expected to operate also in more or less closely related fields—that is, to “transfer” to other situations.

The subject of the transfer of training has for a number of years been a very controversial one. Only recently has there been any

evidence of agreement among the body of educational psychologists. We need not at this point go into detail as to the present status of disciplinary values since this forms the subject of a separate chapter. It is sufficient for our present purpose to call attention to the fact that most psychologists have abandoned two extreme positions as to transfer of training. The first asserted that a pupil trained to reason well in geometry would thereby be trained to reason equally well in any other subject; the second denied the possibility of any transfer and hence the possibility of any general mental training. That the effects of training can transfer from one field of learning to another is now, however, recognized. The amount of transfer in any given case depends upon a number of conditions. If these conditions are favorable, there may be considerable transfer, but in any case the amount of transfer is difficult to measure. Training in connection with certain attitudes, ideals, and ideas is now almost universally admitted by psychologists to have general value. It may, therefore, be said that, with proper restrictions, general mental discipline is a valid aim in education.

The aims which we are discussing are so important in the restricted domain of quantitative and spatial (i.e., mathematical or partly mathematical) thinking which every educated individual is called upon to perform that we do not need for the sake of our argument to raise the question as to the extent of transfer to less mathematical situations.

In formulating the disciplinary aims of the study of mathematics the following should be mentioned:

(1) The acquisition, in precise form, of those *ideas or concepts in terms of which the quantitative thinking of the world is done*. Among these ideas and concepts may be mentioned ratio and measurement (lengths, areas, volumes, weights, velocities, and rates in general, etc.), proportionality and similarity, positive and negative numbers, and the dependence of one quantity upon another.

(2) The development of *ability to think clearly in terms of such ideas and concepts*. This ability involves training in—

(a) Analysis of a complex situation into simpler parts. This includes the recognition of essential factors and the rejection of the irrelevant.

(b) The recognition of logical relations between interdependent factors and the understanding and, if possible, the expression of such relations in precise form.

(c) Generalization; that is, the discovery and formulation of a general law and an understanding of its properties and applications.

(3) The acquisition of *mental habits and attitudes* which will make the above training effective in the life of the individual. Among such habitual reactions are the following: a seeking for relations and their precise expression; an attitude of enquiry; a desire to understand, to get to the bottom of a situation; concentration and persistence; a love for precision, accuracy, thoroughness, and clearness, and a distaste for vagueness and incompleteness; a desire for orderly and logical organization as an aid to understanding and memory.

(4) Many of these disciplinary aims are included in the broad sense of *the idea of relationship or dependence*—in what the mathematician in his technical vocabulary refers to as a “function” of one or more variables. Training in “functional thinking,” that is, thinking in terms of and about relationships, is one of the most fundamental disciplinary aims of the teaching of mathematics.

Cultural aims.—By cultural aims we mean those somewhat less tangible but none the less real and important intellectual, ethical, esthetic or spiritual aims that are involved in the development of appreciation and insight and the formation of ideals of perfection. As will be at once apparent the realization of some of these aims must await the later stages of instruction, but some of them may and should operate at the very beginning.

More specifically we may mention the development or acquisition of—

(1) *Appreciation of beauty* in the geometrical forms of nature, art, and industry.

(2) *Ideals of perfection* as to logical structure, precision of statement and of thought, logical reasoning (as exemplified in the geometric demonstration), discrimination between the true and the false, etc.

(3) *Appreciation of the power of mathematics*—of what Byron expressively called “the power of thought, the magic of the mind”¹² and the rôle that mathematics and abstract thinking, in general, have played in the development of civilization; in particular in science, in industry, and in philosophy. In this con-

¹² D. E. Smith: *Mathematics in the Training for Citizenship, Teachers College Record*, XVIII (May, 1917), p. 6.

nection mention should be made of the religious effect, in the broad sense, which the study of the infinite and of the permanence of laws in mathematics tends to establish.¹³

II. The Point of View Governing Instruction

The practical aims enumerated above, in spite of their vital importance, may without danger be given a secondary position in seeking to formulate the general point of view which should govern the teacher, provided only that they receive due recognition in the selection of material and that the necessary minimum of technical drill is insisted upon.

The primary purposes of the teaching of mathematics should be to develop those powers of understanding and of analyzing relations of quantity and of space which are necessary to an insight into and control over our environment and to an appreciation of the progress of civilization in its various aspects, and to develop those habits of thought and of action which will make these powers effective in the life of the individual.

All topics, processes, and drill in technique which do not directly contribute to the development of the powers mentioned should be eliminated from the curriculum. It is recognized that in the earlier periods of instruction the strictly logical organization of subject-matter ¹⁴ is of less importance than the acquisition, on the part of the pupil, of experience as to facts and methods of attack on significant problems, of the power to see relations, and of training in accurate thinking in terms of such relations. Care must be taken, however, through the dominance of the course by certain general ideas that it does not become a collection of isolated and unrelated details.

Continued emphasis throughout the course must be placed on the development of ability to grasp and to utilize ideas, processes,

¹³For an elaboration of the ideas here presented in the barest outline, the reader is referred to the article by D. E. Smith already mentioned and to his presidential address before the Mathematical Association of America. "Religio Mathematici," *American Mathematical Monthly*, vol. 28 (Oct., 1921), pp. 339-349, also published in *The Mathematics Teacher*, vol. 14 (Dec., 1921), pp. 413-426.

¹⁴"The logical from the standpoint of subject matter represents the goal, the last term of training, not the point of departure." Dewey, "How We Think," p. 62.

and principles in the solution of concrete problems rather than on the acquisition of mere facility or skill in manipulation. The excessive emphasis now commonly placed on manipulation is one of the main obstacles to intelligent progress. On the side of algebra, the ability to understand its language and to use it intelligently, the ability to analyze a problem, to formulate it mathematically, and to interpret the result must be dominant aims. *Drill in algebraic manipulation should be limited to those processes and to the degree of complexity required for a thorough understanding of principles and for probable applications either in common life or in subsequent courses which a substantial proportion of the pupils will take.* It must be conceived throughout as a means to an end, not as an end in itself. Within these limits, skill in algebraic manipulation is important, and drill in this subject should be extended far enough to enable students to carry out the essential processes accurately and expeditiously.

On the side of geometry the formal demonstrative work should be preceded by a reasonable amount of informal work of an intuitive, experimental, and constructive character. Such work is of great value in itself; it is needed also to provide the necessary familiarity with geometric ideas, forms, and relations, on the basis of which alone intelligent appreciation of formal demonstrative work is possible.

The one great idea which is best adapted to unify the course is that of the *functional relation*. The concept of a variable and of the dependence of one variable upon another is of fundamental importance to everyone. It is true that the general and abstract form of these concepts can become significant to the pupil only as a result of very considerable mathematical experience and training. There is nothing in either concept, however, which prevents the presentation of specific concrete examples and illustrations of dependence even in the early parts of the course. Means to this end will be found in connection with the tabulation of data and the study of the formula and of the graph and of their uses.

The primary and underlying principle of the course should be the idea of relationship between variables, including the methods of determining and expressing such relationship. The teacher should have this idea constantly in mind, and the pupil's advancement should be consciously directed along the lines which will present first one and then another of the ideas upon which finally the formation of the general concept of functionality depends.

The general ideas which appear more explicitly in the course and under the dominance of one or another of which all topics should be brought are: (1) The formula, (2) graphic representation, (3) the equation, (4) measurement and computation, (5) congruence and similarity, (6) demonstration.

III. The Organization of Subject Matter

"General" courses.—We have already called attention to the fact that, in the earlier periods of instruction especially, logical principles or organization are of less importance than psychological and pedagogical principles. In recent years there has developed among many progressive teachers a very significant movement away from the older rigid division into "subjects" such as arithmetic, algebra, and geometry, each of which shall be "completed" before another is begun, and toward a rational breaking down of the barriers separating these subjects, in the interest of an organization of subject-matter that will offer a psychologically and pedagogically more effective approach to the study of mathematics.

There has thus developed the movement toward what are variously called "composite," "correlated," "unified," or "general" courses. The advocates of this new method of organization base their claims on the obvious and important interrelations between arithmetic, algebra, and geometry (mainly intuitive), which the student must grasp before he can gain any real insight into mathematical methods and which are inevitably obscured by a strict adherence to the conception of separate "subjects." The movement has gained considerable new impetus by the growth of the junior high school, and there can be little question that the results already achieved by those who are experimenting with the new methods of organization warrant the abandonment of the extreme "water-tight compartment" method of presentation.

The newer method of organization enables the pupil to gain a broad view of the whole field of elementary mathematics early in his high-school course. In view of the very large number of pupils who drop out of school at the end of the eighth or the ninth school year or who for other reasons then cease their study of mathematics, this fact offers a weighty advantage over the older type of organization under which the pupils studied algebra alone during the ninth school year, to the complete exclusion of all contact with geometry.

It should be noted, however, that the specific recommendations as to content given in the next two chapters do not necessarily imply the adoption of a different type of organization of the materials of instruction. A large number of high schools will for some time continue to find it desirable to organize their courses of study in mathematics by subjects—algebra, plane geometry, etc. Such schools are urged to adopt the recommendations made with reference to the content of the separate subjects. These, in the main, constitute an essential simplification as compared with present practice. The economy of time that will result in courses in ninth-year algebra, for instance, will permit of the introduction of the newer type of material, including intuitive geometry and numerical trigonometry, and thus the way will be prepared for the gradual adoption in larger measure of the recommendations of this report.

At the present time it is not possible to designate any particular order of topics or any organization of the materials of instruction as being the best or as calculated most effectively to realize the aims and purposes here set forth. More extensive and careful experimental work must be done by teachers and administrators before any such designation can be made that shall avoid undesirable extremes and that shall bear the stamp of general approval. This experimental work will prove successful in proportion to the skill and insight exercised in adapting the aims and purposes of instruction to the interests and capacities of the pupils. One of the greatest weaknesses of the traditional courses is the fact that both the interests and the capacities of pupils have received insufficient consideration and study.

Required courses.—The National Committee believes that the material described under IV, 1, below should be required of all pupils and that under favorable conditions this minimum of work can be completed by the end of the ninth school year. In the junior high school, comprising grades seven, eight, and nine, the course for these three years should be planned as a unit *with the purpose of giving each pupil the most valuable mathematical training he is capable of receiving in those years, with little reference to courses which he may or may not take in succeeding years.* In particular, college entrance requirements should, during these years, receive no specific consideration. Fortunately there appears to be no conflict of interest during this period between those pupils who ultimately go to college and those who do not; a course

planned in accordance with the principle just enunciated will form a desirable foundation for college preparation.

Similarly in case of the at present more prevalent 8-4 school organization, the mathematical material of the seventh and eighth grades should be selected and organized as a unit with the same purpose; the same applies to the work of the first year (ninth grade) of the standard four-year high school, and to later years in which mathematics may be a required subject.

In the case of some elective courses the principle needs to be modified so as to meet whatever specific vocational or technical purposes the courses may have.

The movement toward correlation of the work in mathematics with other courses in the curriculum, notably those in science, is as yet in its infancy. The results of such efforts will be watched with the keenest interest.

IV. Suggested Arrangements of Material

In approaching the problem of arranging or organizing this material it is necessary to consider the different situations that may have to be met.

1. *The junior high school.*—In view of the fact that under this form of school organization pupils may be expected to remain in school until the end of the junior high school period instead of leaving in large numbers at the end of the eighth school year, the mathematics of the three years of the junior high school should be planned as a unit, and should include the material recommended in the preceding section. There remains the question as to the order in which the various topics should be presented and the amount of time to be devoted to each. The committee has already stated its reasons for not attempting to answer this question. The following plans for the distribution of time are, however, suggested in the hope that they may be helpful; but no one of them is recommended as superior to the others, and only the large divisions of material are mentioned.

PLAN A

First year: Applications of arithmetic, particularly in such lines as relate to the home, to thrift, and to the various school subjects; intuitive geometry.

Second year: Algebra; applied arithmetic, particularly in such lines as relate to commercial, industrial and social needs.

Third year: Algebra, trigonometry, demonstrative geometry.

By this plan the demonstrative geometry is introduced in the third year, and arithmetic is practically completed in the second year.

PLAN B

First year: Applied arithmetic (as in plan A); intuitive geometry.

Second year: Algebra intuitive geometry, trigonometry.

Third year: Applied arithmetic, algebra, trigonometry, demonstrative geometry.

By this plan trigonometry is taken up in two years, and the arithmetic is transferred from the second year to the third year.

PLAN C

First year: Applied arithmetic (as in plan A); intuitive geometry, algebra.

Second year: Algebra, intuitive geometry.

Third year: Trigonometry, demonstrative geometry, applied arithmetic.

By this plan algebra is confined chiefly to the first two years.

PLAN D

First year: Applied arithmetic (as in plan A); intuitive geometry.

Second year: Intuitive geometry, algebra.

Third year: Algebra, trigonometry, applied arithmetic.

By this plan algebra is confined chiefly to the first two years.

PLAN E

First year: Intuitive geometry, simple formulas, elementary principles of statistics, arithmetic (as in plan A).

Second year: Intuitive geometry, algebra, arithmetic.

Third year: Geometry, numerical trigonometry, arithmetic.

2. *Schools organized on the 8-4 plan.*—It cannot be too strongly emphasized that, in the case of the older and at present more

prevalent plan of the 8-4 school organization, the work in mathematics of the seventh, eighth, and ninth grades should also be organized to include the material here suggested.

The prevailing practice of devoting the seventh and eighth grades almost exclusively to the study of arithmetic is generally recognized as a wasteful marking of time. It is mainly in these years that American children fall behind their European brothers and sisters. No essentially new arithmetic principles are taught in these years, and the attempt to apply the previously learned principles to new situations in the more advanced business and economic aspects of arithmetic is doomed to failure on account of the fact that the situations in question are not and cannot be made real and significant to pupils of this age. We need only refer to what has already been said in this chapter on the subject of problems.

The same principles should govern the selection and arrangement of material in mathematics for the seventh and eighth grades of a grade school as govern the selection for the corresponding grades of a junior high school, with this exception: Under the 8-4 form of organization many pupils will leave school at the end of the eighth year. This fact must receive due consideration. The work of the seventh and eighth years should be so planned as to give the pupils in these grades the most valuable mathematical information and training that they are capable of receiving in those years, with little reference to courses that they may take in later years. As to possibilities for arrangement, reference may be made to the plans given above for the first two years of the junior high school. When the work in mathematics of the seventh and eighth grades has been thus reorganized, the work of the first year of a standard four-year high school should complete the program suggested.

Finally, there must be considered the situation in those four-year high schools in which the pupils have not had the benefit of the reorganized instruction recommended for grades seven and eight. It may be hoped that this situation will be only temporary, although it must be recognized that, owing to a variety of possible reasons (lack of adequately prepared teachers in grades seven and eight, lack of suitable textbooks, administrative inertia, and the like), the new plans will not be immediately adopted and that, therefore, for some years many high schools will have to face the situation implied.

In planning the work of the ninth grade under these conditions teachers and administrative officers should again be guided by the principle of giving the pupils the most valuable mathematical information and training which they are capable of receiving in this year with little reference to future courses which the pupil may or may not take. It is to be assumed that the work of this year is to be required of all pupils. Since for many this will constitute the last of their mathematical instruction, it should be so planned as to give them the widest outlook consistent with sound scholarship.

Under these conditions it would seem desirable that the work of the ninth grade should contain both algebra and geometry. It is, therefore, recommended that about two-thirds of the time be devoted to the most useful parts of algebra, including the work on numerical trigonometry, and that about one-third of the time be devoted to geometry, including the necessary informal introduction and, if feasible, the first part of demonstrative geometry.

It should be clear that owing to the greater maturity of the pupils much less time need be devoted in the ninth grade to certain topics of intuitive geometry (such as direct measurement, for example) than is desirable when dealing with children in earlier grades. Even under the conditions presupposed, pupils will be acquainted with most of the fundamental geometric forms and with the mensuration of the most important plane and solid figures. The work in geometry in the ninth grade can then properly be made to center about indirect measurement and the idea of similarity (leading to the processes of numerical trigonometry), and such geometric relations as the sum of the angles of a triangle, the Pythagorean proposition, congruence of triangles, parallel and perpendicular lines, quadrilaterals, and the more important simple constructions.

Principles of the reconstruction of curricula and the subject matter of different courses. The existence of a subject in the program of studies indicates but does not guarantee the worth of the subject.

All subjects proposed for the program of studies must contribute to the perpetuation or improvement of such social and political life as we consider desirable.

"The first duty of the school is to teach pupils to do better the desirable things that they will do anyway."

The school should reveal higher and higher activities and make them "both desired and to an extent possible."

The school should strive to develop positive constructive ends rather than negative destructive ones.

"Every course, especially in the lower years, should be so organized that it is of the maximum worth to the extent to which it has been pursued."

An inventory of the desirable characteristics of citizens is necessary in curriculum construction. All courses should be defensible in terms of this inventory.

The grading of subject matter should be considered in curriculum reconstruction.

The curriculum should not be regarded as fixed but should be tested from time to time by careful measurement of the results obtained by it. Changes should then be made in the curriculum if the results warrant them.

SUGGESTIONS FOR STUDY AND DISCUSSION

1. What reasons, other than a desire to make high-school work easier, can be given for reducing specific requirements in standard subjects?

2. Cite personal observations to illustrate at least two of the three obstacles to curriculum revision as mentioned by Briggs.

3. In what respects, if any, are the "eight steps" of Briggs in agreement with the principles formulated by Bobbitt and Charters in Chapter XIV?

4. How can a progressive system of education conform with the notion that education must perpetuate and promote the interests of the state?

5. What two fundamental forms of reconstruction of the program of studies have taken place in the junior high school? Illustrate each.

6. What is a school survey? What practical results can such a survey yield?

7. Which of the forms of curriculum construction described by

Charters in Chapter XIV is exemplified in Russell's account of the Elyria survey?

8. After reading the account of Elyria survey, formulate a simple plan for a survey such as a teacher might profitably conduct in a small town or village.

9. It is sometimes alleged that the reconstruction of high school subjects has made them very easy but has shorn them of their fundamental values. Examine the plan for the reconstruction of mathematics and evaluate the suggestions for reconstruction in the light of this criticism.

10. Early in the discussion of mathematics, aims are set up with reference to which the course in mathematics is reconstructed. Try to show that such objectives as Bobbitt or Charters advocate would also support the reorganized form of mathematics.

11. Evaluate the principles at the end of this chapter.

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SUGGESTED TOPICS FOR REPORTS

1. The relation of education to national progress.
2. The dependence of ability upon environment.
3. Limitations of the extension of education.
4. Comparison of the opportunities for secondary education in different centuries or periods.
5. The great periods of the extension of secondary education.
6. Historical reasons for the extension of secondary education.
7. The cost of secondary education.
8. Comparison of early secondary schools of England with those of New England.
9. Types of schools developed in colonial times.
10. Secondary school teachers of a significant century or period.
11. Textbooks and subject matter of the Latin grammar school, or period of the academy, or of the high school.
12. Historical treatment of the teaching of English, of history, or of science.
13. Comparison of the rise of the academies with that of the high school.
14. The development of teacher training.
15. The rise of the high school.
16. The development of the high school in any state.
17. Historical development of the aims of secondary education in America.
18. Development of the concept of free secondary education.
19. The home and school as coöperating agencies.
20. The teacher as a social organizer.
21. Community clubs and social betterment.
22. The school as a social center.
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24. The social effects of the playground movement.
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